Canyons of the Ancients National Monument
Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): Rohman Stoner | Date: 6/1/01 | Polygon # 50

Allotment: ~~[illegible]~~ Yellow Jacket | Pasture:

Location: GPS lat 37° 21.550' long 108° 56.075' Legal SW¼ S22 T36N R19W

Aerial Photo: 1-3-8 | Site Photos - Roll: 4 | Number: 15+16

Soil Map Unit/Component Name: Uzacal (Zwicker) - Claysprings | Number: 138

Range/Ecological Site Name: Clayey Saltdesert | Number: 403

Slope: 3% | Aspect: 270° | Topographic Position: bench | Elevation: 5340'

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: stony clay loam | Parent material: Morrison shale

Depth: Very shallow <10" ___ Shallow 10-20" ___ Moderate 20-40" X Deep >40" ___

List diagnostic horizons in profile and depth:

1	2	3	4
1 $CaCO_3$ 10-32"	2 bedrock 20"-40"	3	4

Evaluation Area Determination:

Surface texture: sandy clay loam | Parent material: Morrison shale

Depth: Very shallow <10" ___ Shallow 10-20" ___ Moderate 20-40" X Deep >40" ___

List diagnostic horizons in profile and depth:

1	2	3	4
1 6-12" calcic horizon	2 12"→20" lower $CaCO_3$	3 20" heavy $CaCO_3$	4 24" - bedrock

Avg. annual PPT: Cortez 13", Hovenweep 11" | Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: minimal

Livestock Use: minimal

Offsite influences on area and significance e.g. roads, chainings, fire: nearby two-track

Benchmark used for comparison: Ecological Reference Area ___ (ERA number ___) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	3	3	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bio Integ
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	4	4	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	3	3	
Comments								
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	5	5	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	3		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	4	4	4
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	4	4	4
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		4	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	5	5	5
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			3
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			3
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		3	3
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			3
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			2
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bioti Integr
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			3
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	3	3	3
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	Bioti Integr
1. Extreme			
2. Moderate to Extreme			1
3. Moderate	4	5	(6)
4. Slight to Moderate	(3)	(4)	2
5. None to Slight	3	3	1
	10	12	10

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: Stoner, Rohman, Haspels | Date: 6-1-01 | Polygon #: 50

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

LF	Species code	meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5	SCC	ACC	% Freq	CFI
G	SPAI		3			8	3	3	2	4	1				3	3	2	1	5	1	4	3	46.0	2.3	0.75	17.2
	HEJA			2	4							2	4	1			2	1					16.0	8.0	0.35	2.8
G	ANTE6		5	1	3	3	2	1	3	1	0	1	1	0	1	2	1	1	2	1	1	2	32.6	1.6		16.3
	VUOC		1	T	T		T	T	T	T	0	0	0	0	1	0	0	T	0	–	T	T	4.5	2.3	0.85	
	SPCO																					T	0.5			
	PHLO2																			T	T		1.0			
F	UNK. Galiaceae		T																				0.5	0.0		
	DESC			1																			1.0	0.5	0.05	
	CYPU2														T						0		3.5		0.1	0.0
	DRCU													T								T	1.0	0.0	1	
Fo	PLPA2		T			T	T		T					T	T			T	T				4.0	0.2	4	0
	AAFF							T															0.5	0.0		0.0
	UNK A				T																		0.5	0.0		
	UNK B							T	T	T	T								T				2.0			0
	LAMA9									T			T		T	T			T				2.5	0.1		
	CEOR2																			O			3.0	0.2		0
Bare soil without canopy			0	8	1	0	2	2	1	2	2	3	0	2	1	3	4	2	3	6	5	5	52.9	26.4		0.4
Groundcover: (total groundcover should equal 100%)																										
Cyanbac. crust			0	T	1	1	0	0	1	1	2	1	3	2	1	1	1	1	1	T	T	T	18.1	9		
Moss			1	T	1	T		4	1	2	1	0	0	T	T	T	T		–		–	T	10	5.5	6	4
Lichen			–	T	0	0	1	0	1	1	2	1	2	2	3	1	1	0	0	T	T	T	1			
Litter			9	2	7	7	6	2	6	4	2	2	4	2	3	3	4	6	4	4	4	5		3		
Wood																										
Basal Veg			0	T	0	2	0	0	0	0	T	0	0	T	T	0	0	T	1	T	0	0	6.9	3	1.0	3.1
Bare Soil			0	8	1	0	2	2	1	2	2	3	0	2	1	4	4	2	3	6	5	5				
Gravel <3 in.			T	0		0	T	0		0	1	2	0	1	1	1	0	1	1	0	0	0	6.8	4	2	4
Cobble 3-10 in							0	1				1	0	1	1								4.6	2.3	0.75	0.6
Stone 10-24 in.																										
Boulder >24 in.																										
Bedrock																										

Code	Range	Mid-point	Code	Range	Mid-point
#	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
0	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
1	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
2	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
3	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
4	35.1 - 45% cover	40.0%	X	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

F	Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

cies common in the evaluation area that were not measured on the transect:

Line Intercept

Observers: Rahman Stoner **Date:** 6/1/01 **Polygon #:** 50

Line Length: 30 m **Transect** 1 **of** _____

Species Codes:

	OPPO																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	1963	1984	21																		
Total Intercept			21																		
% Cover			70%																		

e intercept values that are standing dead material

	Species Codes:																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter

Production Data Sheet

Observers: Rohman, Stoner, HASPELS | Date: 6/1/01 | Polygon #: 50

Transect length: 30 meters | Frames per transect: 20 @ 20x50 cm | Transect 1 of ____

Growth form	0.0 1*	1.5 2	3.0 3	4.5 4	6.0 5	7.5 6*	9.0 7	10.5 8	12.0 9	13.5 10	15.0 11*	16.5 12	18.0 13	19.5 14	21.0 15	22.5 16*	24.0 17	25.5 18	27.0 19	28.5 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses	6	2	4	18/13	7	11	2	5/6	2	2	3	1/1	2	3	2	2/1	6	2	4	3/3	24/24 82	1.21	.65	64.49
Annual Grasses	5	2	2	1/2	1	1	2	T/1	T	T	T	T	1	1	T	T	2	T	T	T	2/3.5 24.5	.57	.95	13.27
Perennial Forbs	T	1											T					1	T	T	4	—	.90	3.6
Annual Forbs	T	T	T	T	T	T	T	T	T		T	T	T	T		T	T	T		T	8	—	.50	4
Shrub																								

Correction factor = clip wt /est wt.

Total production in lb/ac = 89.2 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	287.63
Annual Grasses	59.18
Perennial Forbs	16.06
Annual Forbs	17.84
Shrub	—
Total Production	380.71

List the dominant species clipped for these growth forms:

Perennial Forbs:

Shrubs: PRICKLY PEAR CACTUS

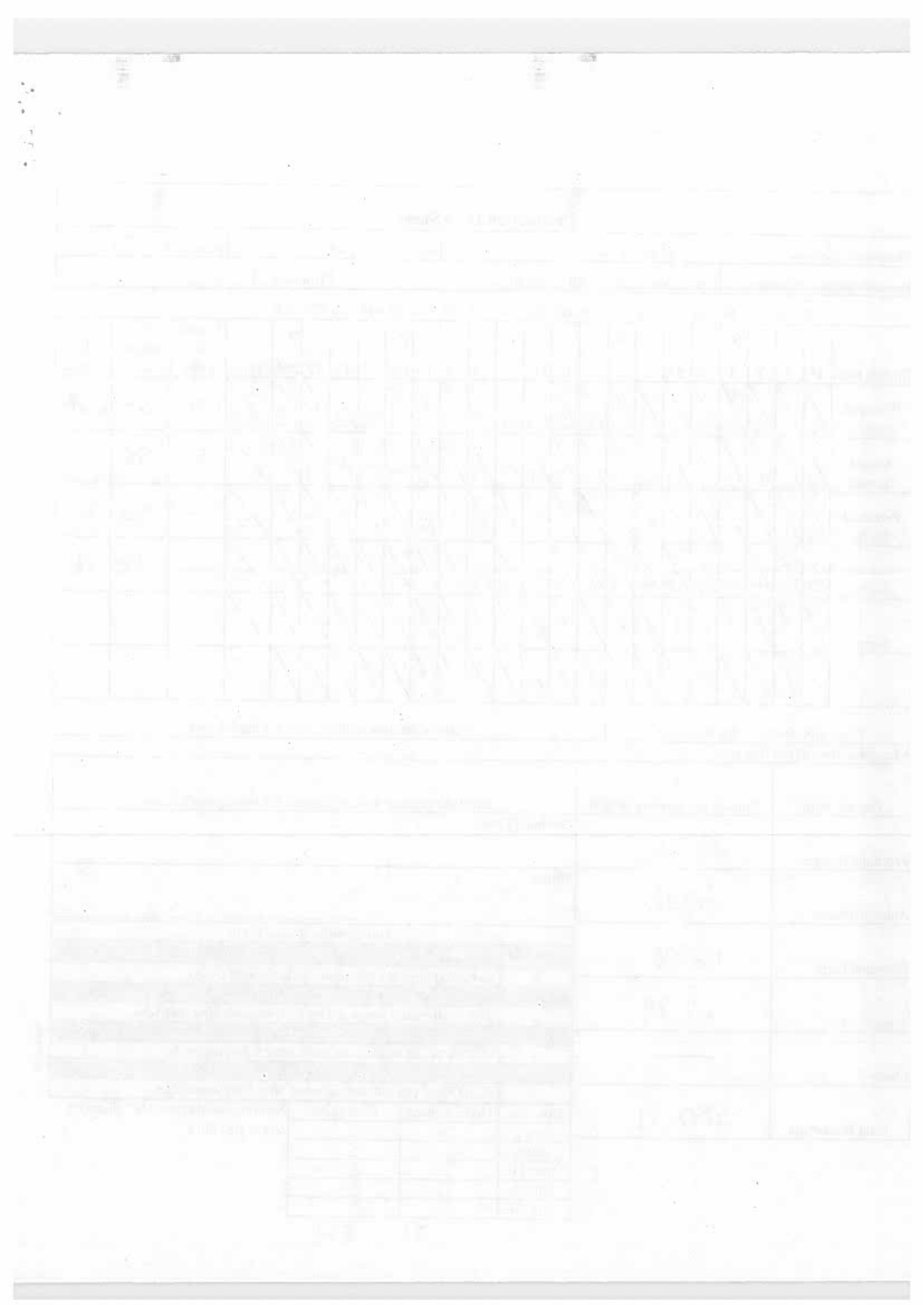
Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	< 10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
plot 1	3	2
plot 6	6	5
plot 11	6	6
plot 16	6	2
plot 20	4	3
	5.0	3.6

Samples should be < 1/4 " diameter and < 1/8" thick

0
7.50
15
22.50
28.50



Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: HAROLD S. STOVER | Date: 6/4/01 | Polygon number: 50

Clayey Saltdesert - 403

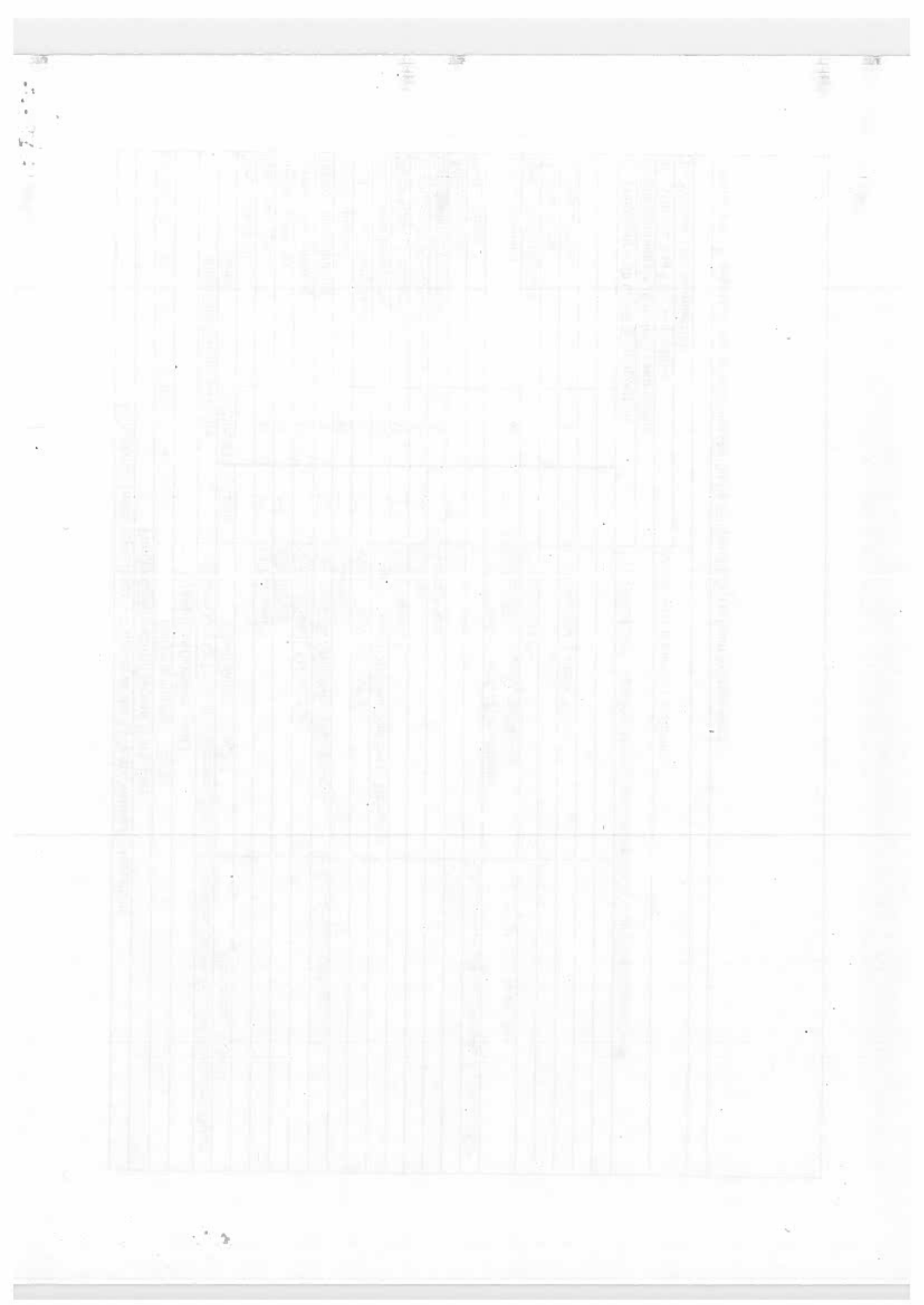
Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen	M	T	Utah Juniper	
Shrubs - sprouting	M	T	Rabbitbrush	
Shrubs - non-sprouting	D		Nuttall saltbush, Mat saltbush	
Shrubs - non-sprouting	S	T	Shadscale, Fourwing, winterfat, budsage,	Big Sage, Greasewood
Shrubs - invasive	M	T	Snakeweed	
Cool Season Bunchgrasses	S		Salina wildrye, squirreltail	
Cool Season Bunchgrasses	M		Ricegrass, needle&thread, Sandburg, Threeawn	
Warm Season Bunchgrasses	M	D	Alkali sacaton	
Warm Season Rhizomatous Grasses	S	S	Galleta,	
Cool Season Rhizomatous	S		Westernwheat	
Annual Grasses		S		Cheat
Forbs - annual				Ind. ww wheat, stickseed, sand aster
Forbs - perennial	M	T	Onion, Phlox, Primrose, Princesplume, Globemallow, Sego, Cymopteris	Link. Calochortus larkspur
Forbs - Nitrogen fixing			Wooly locoweed	
Noxious weeds				
Biological crusts	S	S	Cyanobacteria, Lichens, Moss	

D - Dominant = 40 to 100% composition
S - Subdominant = 10 to 40% composition
M - Minor = 2 to 5% composition
T - Trace = <2% composition

* Potential based on ecological/range site description or ecological reference area

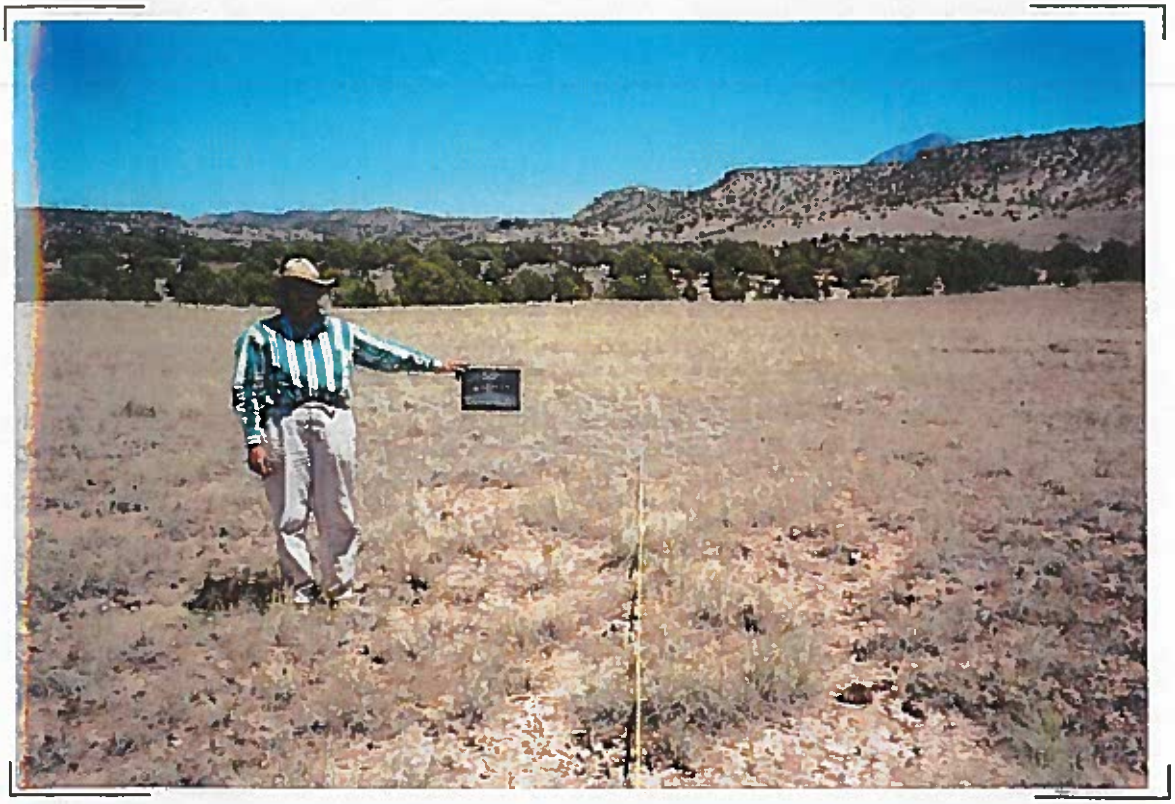
Actual is for the area of evaluation

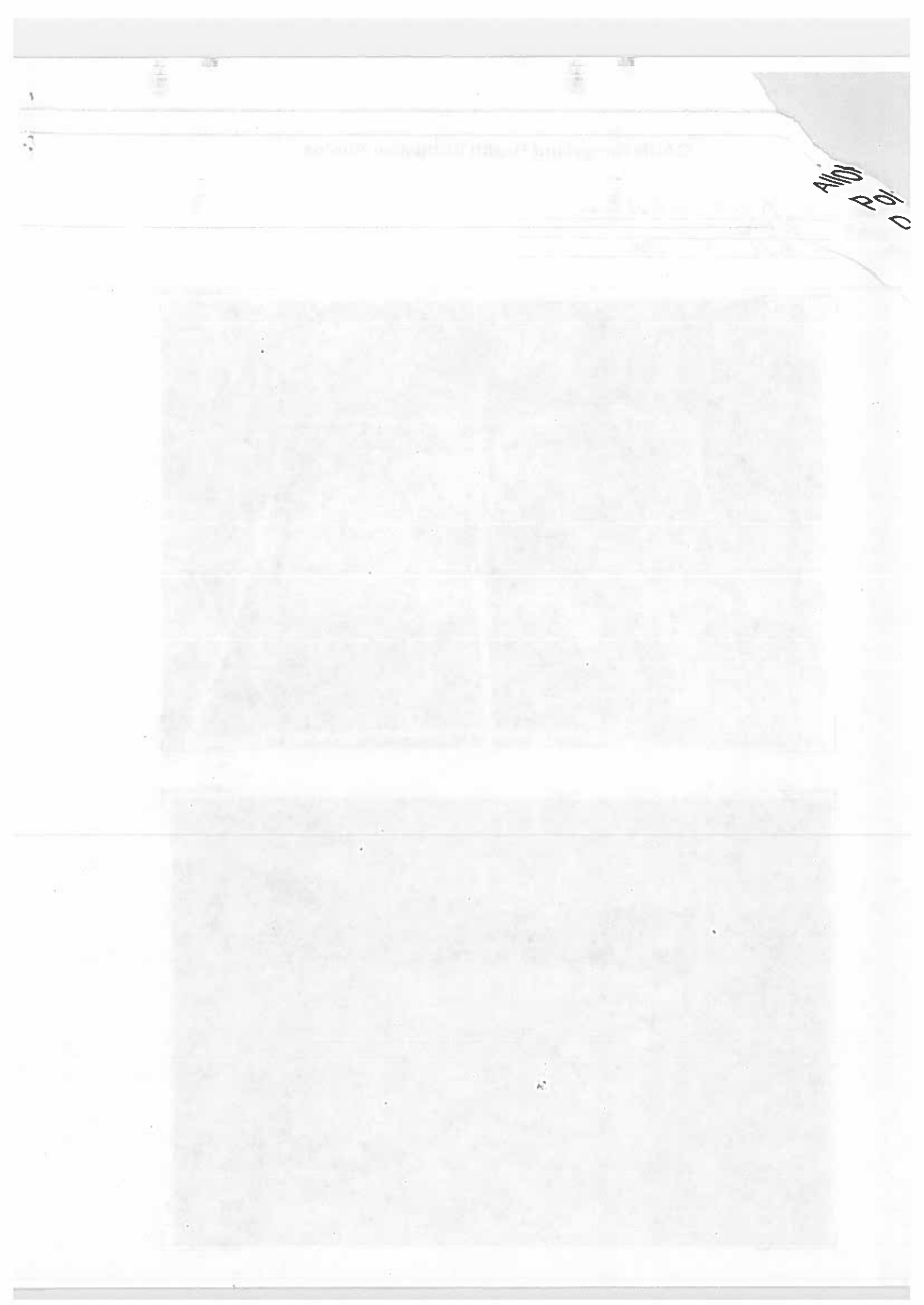
Comments: Potential annual production should be 350 pounds/acre in an average year



CANM Rangeland Health Evaluation Photos

ıment CANNONBALL
ygon # 050
ıte 6/1 / /2001





Canyons of the Ancients National Monument

Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): Rohman, Madsen, Weaver		Date: 8/1/01	Polygon # 166
Allotment: (Cahone Mesa on photo board) Yellow Jacket		Pasture:	
Location: GPS lat 37° 24.733' long 108° 57.607'	Legal S T R NE¼ S5 T36N R19W		
Aerial Photo: 1-2-12	Site Photos - Roll: 17	Number: 9 + 10	
Soil Map Unit/Component Name: Claysprings		Number: 22	
Range/Ecological Site Name: Saltdesert Break		Number: 406	
Slope: 7%	Aspect: 64°	Topographic Position: hill	Elevation: 5650'

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: very stony clay loam — Parent material: residuum from Morrison Shale

Depth: Very shallow <10" X Shallow 10-20" X Moderate 20-40" ___ Deep >40" ___

List diagnostic horizons in profile and depth:

1	2	3	4
9-18" gypsum crystals	2 6-20" weathered Morrison shale		

Evaluation Area Determination:

Surface texture: very stony clay loam — Parent material: Morrison shale

Depth: Very shallow <10" ___ Shallow 10-20" ___ Moderate 20-40" X Deep >40" ___

List diagnostic horizons in profile and depth:

1	2	3	4
1 16" - slight $CaCO_3$ flecking, inc. clay	2 22" increased $CaCO_3$	3 24" - bedrock	

Avg. annual PPT: Cortez 13", Hovenweep 11" — Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: minimal - rabbit

Livestock Use: moderate → heavy cattle

Offsite influences on area and significance e.g. roads, chainings, fire: road, reservoir nearby

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	In
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	2	2	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled, exposed plant roots are common	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	4	4
Comments							
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	4	4
Comments	a lot of open area w/gravel cover						
5. Gullies	Common with indications of active erosion and downcutting, vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	4	4
Comments							
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	4	
Comments							
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3
Comments							
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	3	3	3
Comments							

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	3	3	
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		3	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	5	5	5
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site, and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			2
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site			1
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		2	2
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			1
Comments	due to the lack of many grasses expected here and the decadence of the galleta							
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			2
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	I In
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			1
Comments								
18. Biological Crusts	Found only in protected areas. very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	1	1	1
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	E Inf
1. Extreme	1	1	4
2. Moderate to Extreme	1	2	(3)
3. Moderate	(2)	(4)	2
4. Slight to Moderate	4	3	
5. None to Slight	2	2	1
	10	12	

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: Weaver, Madsen, Rohman | Date: 8 / 2 / 91 | Polygon #: 166

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect ___ of ___

meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
LF Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
GP HIJA	1	2	T	2	1	1	2	0	2	2	1	2	1	1	2	1	1	2	2		263	13.2	0.95	12.5
GA BRJA	1	1	2	1	0	0	T	1	T		0	T	T	3		T					101.5	5.1	0.7	3.6
↓ ANTE6	T	0		0		T	T	0	0	T	T	T	0	0	T	0	0	1	0	3	70.5	3.5	0.9	3.2
FP UNK Chlochortus	T	T	T	T	T	0	T	0		T	T	T	0	0	T		T				17.5	0.9	0.75	0.7
HEMU3	T				T	0	T	0	T	T		T		T	T	T	T		T		11.5	0.6	0.65	0.4
UNK Cymopterus															0	T				T	4.0	0.2	0.15	0.0
↓ unk Allium																	T	T			1.0	0.1	0.1	0.0
↑ DRCU																	T				0.5	0.0	0.05	0.0
CEOR2															1	T				T	11	0.6	0.15	0.1
GIOP									T		T										1.0	0.1	0.1	0.0
ERCI6									T		T	T	1	0	1		0	T	0	0	3.4	1.7	0.5	0.8
AAFF																								
FA PLPA2	T		T							0	0	0	0	T	T			T			14.5	0.7	0.45	0.3
Bare soil without canopy	5	5	6	4	8	5	4	6	5	2	4	4	3	2	3	4	5	4	6	4	89.0	4.4	1.0	4.4
Groundcover: (total groundcover should equal 100%)																								
Cyanbac. crust														T				T			1.0	0.1	0.1	0.0
Moss																								
Lichen	T	T	T	T	T	T	T		T	T	0	T	T	1	T	T	T	0	T	T	2.4	1.2	0.95	1.1
Litter	2	2	1	3	1	1	2	1	2	2	1	1	2	3	2	2	2	3	2	2	37.0	18.5	1.0	18.5
Wood																								
Basal Veg	0	0	T	0	0	0	0	T	0	0	0	0	0	0	0	T	0	T	0	T	47.5	2.4	1.0	2.4
Bare Soil	5	5	6	4	8	5	4	6	5	2	4	4	3	3	3	4	5	4	6	4	90.0	4.5	1.0	4.5
Gravel <3 in.	2	2	2	3	1	3	3	3	3	6	4	5	4	3	3	3	3	3	2	4	65.0	32.5	1.0	32.5
Cobble 3-10 in	0	0	0		T	1	1						0			1	0	T	0	0	5.2	2.6	0.6	1.6
Stone 10-24 in.																								
Boulder >24 in.																								
Bedrock																								

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
0	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
1	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
2	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
3	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
4	35.1 - 45% cover	40.0%	X	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

ies common in the evaluation area that were not measured on the transect:

Line Intercept

Observers: Rohman, Madsen, Weaver | Date: 8/2/01 | Polygon #: 16C

Line Length: 30 m | Transect 1 of 1

Species Codes:

	OPPO			GUSA2			ATCO														
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	70	86	16	290	292	2	1963	2040	77												
				613	622	9															
				725	731	6															
				1865	1875	10															
				2296	2319	23															
				2323	2347	24															
				2459	2472	13															
				2592	2595	3															
				2888	2893	5															
Total Intercept			16			95			77												
% Cover			1%			3%			3%												

Circle intercept values that are standing dead material

	Species Codes:																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter

Production Data Sheet

Observers: MADSEN, WEHNER, DOHMAN	Date: 08-02-	Polygon #: 11,6
Transect length: 30 meters	Frames per transect: 20 @ 20x50 cm	Transect 1 of 1

	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
Growth form	1*	2	3	4	5	6*	7	8	9	10	11*	12	13	14	15	16*	17	18	19	20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses	1	1	T	6 / 3	1	2	5	1	3	2	1	2	4	T / T	4 / 4	3	2	2	2		10.5/7.5 / 40	1.4	.85	47.6
Annual Grasses	T	T	1	T / T	T	T	T	T	T	T	T	T	T	1 / 1	T / T	T	T	T	T	2 / 1	1/3 / 11.5	1.33	.95	14.53
Perennial Forbs	T	T	T	T / T	T	T	T	T	T	T	T	T	T	T / T	T / T	T	T	T	T	T / T	10	—	.90	9
Annual Forbs	T		T						T	T	T	T	T	T / T	T / 1	T	T	T	T	T / T	7.5	.75	.85	4.78
Shrub	1		T	T / T	1									4 / 4	T / T				1	2 / 2	10.5	—	.5	5.25

Correction factor = clip wt /est wt.

Total production in lb/ac = [redacted] 4.46 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	212.30
Annual Grasses	64.80
Perennial Forbs	40.14
Annual Forbs	21.32
Shrub	23.41
Total Production	361.97

List the dominant species clipped for these growth forms:

Perennial Forbs: , phlox , onion

Shrubs: plot 14)

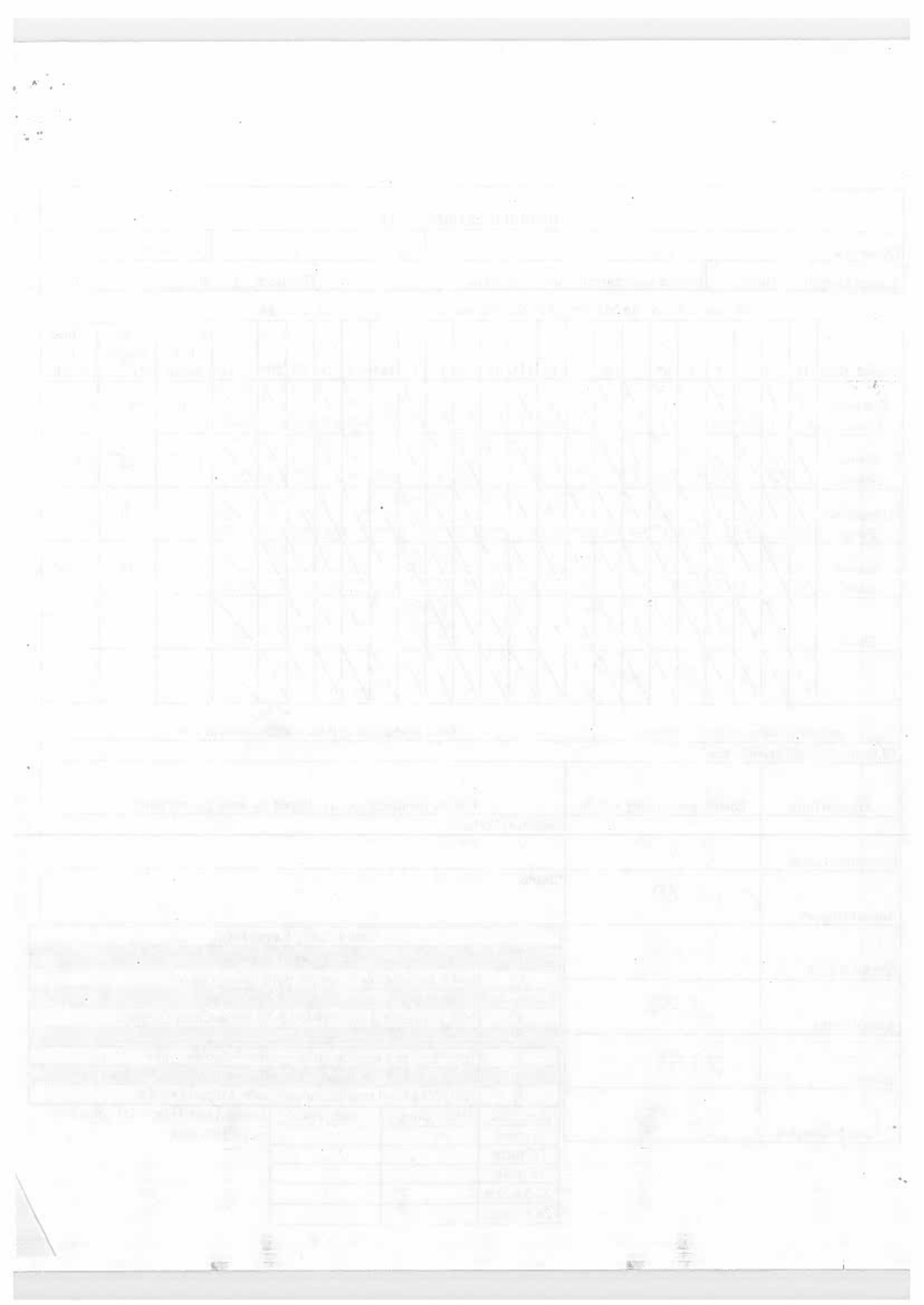
Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
0 meter	—	1
7.5 meter	—	2
15 meter	—	2
22.5 meter	—	1
28.5 meter	—	1

Samples should be < 1/4 " diameter and < 1/8" thick

1.4



Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: Rahman, Madsen, Weaver | Date: 8/2/01 | Polygon number: 166

Saltdesert Breaks - 406

Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen	M	T	Utah Juniper	
Shrubs - sprouting	M		Rabbitbrush	
Shrubs - non-sprouting	D	T - M	Shadscale	
Shrubs - non-sprouting	M	T	Fourwing, Winterfat, Sage	prickly pear, ATOB
Shrubs - invasive		S	snakeweed	
Cool Season Bunchgrasses	M-S	—	Salina wildrye, Ricegrass, Squirreltail, Needle&thread, Sandburg, Threeawn	
Warm Season Bunchgrasses	S	—	Alkali sacaton	
Warm Season Rhizomatous Grasses	D	D	Galleta very decadent	
Cool Season Rhizomatous	M	—	Westernwheat	
Annual Grasses		S		cheat, Japanese brome
Forbs - annual		M		filaree, plantago
Forbs - perennial	M	T	Onion, Phlox, Primrose, Princesplume, Globemallow, Sego, Cymopteris, Larkspur	flax
Forbs - Nitrogen fixing			Locoweed	
Noxious weeds				
Biological crusts	S	T	Cyanobacteria, Lichens, Moss	

D - Dominant = 40 to 100% composition
S - Subdominant = 10 to 40% composition
M - Minor = 2 to 5% composition
T - Trace = <2% composition

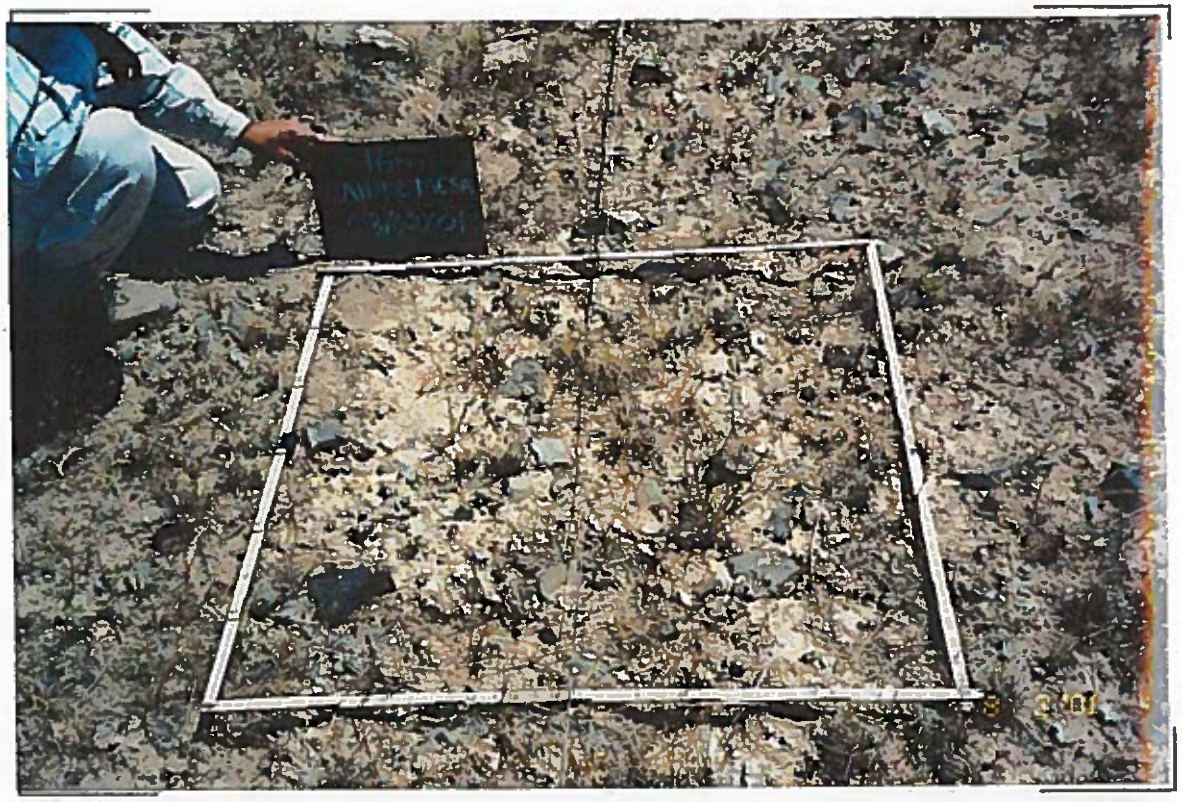
* Potential based on ecological/range site description or ecological reference area

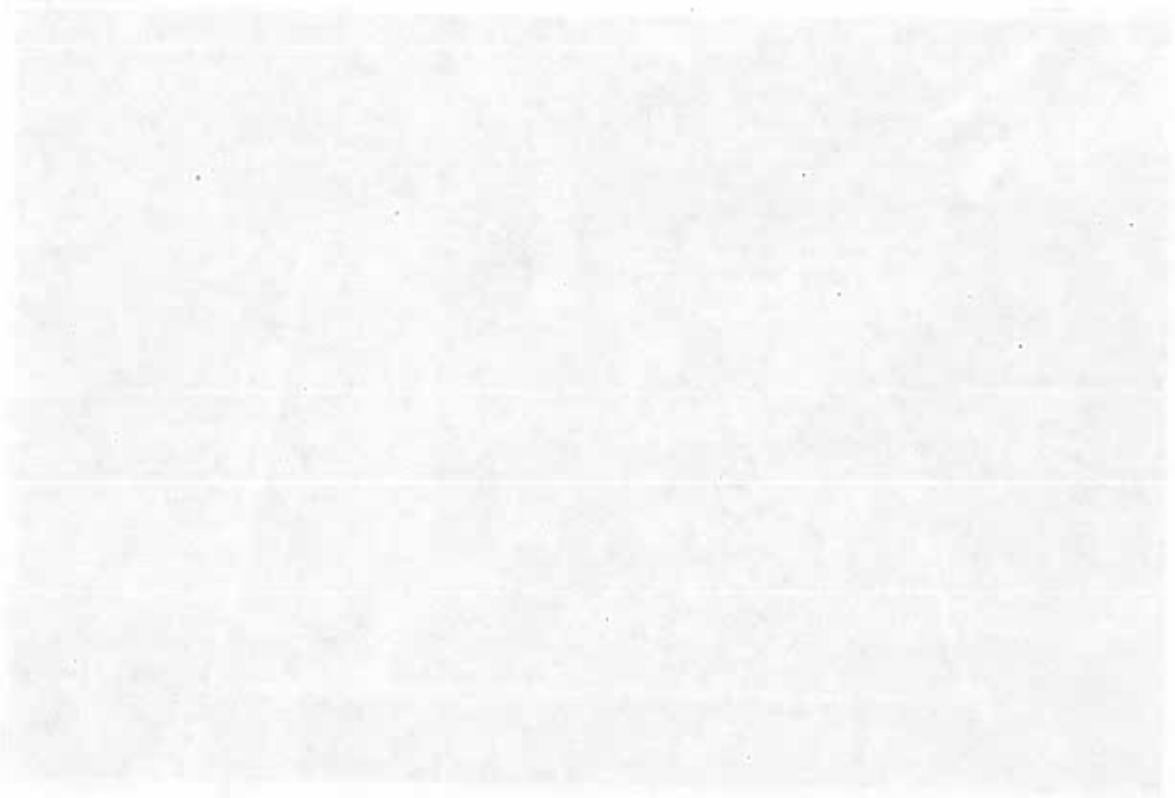
Actual is for the area of evaluation

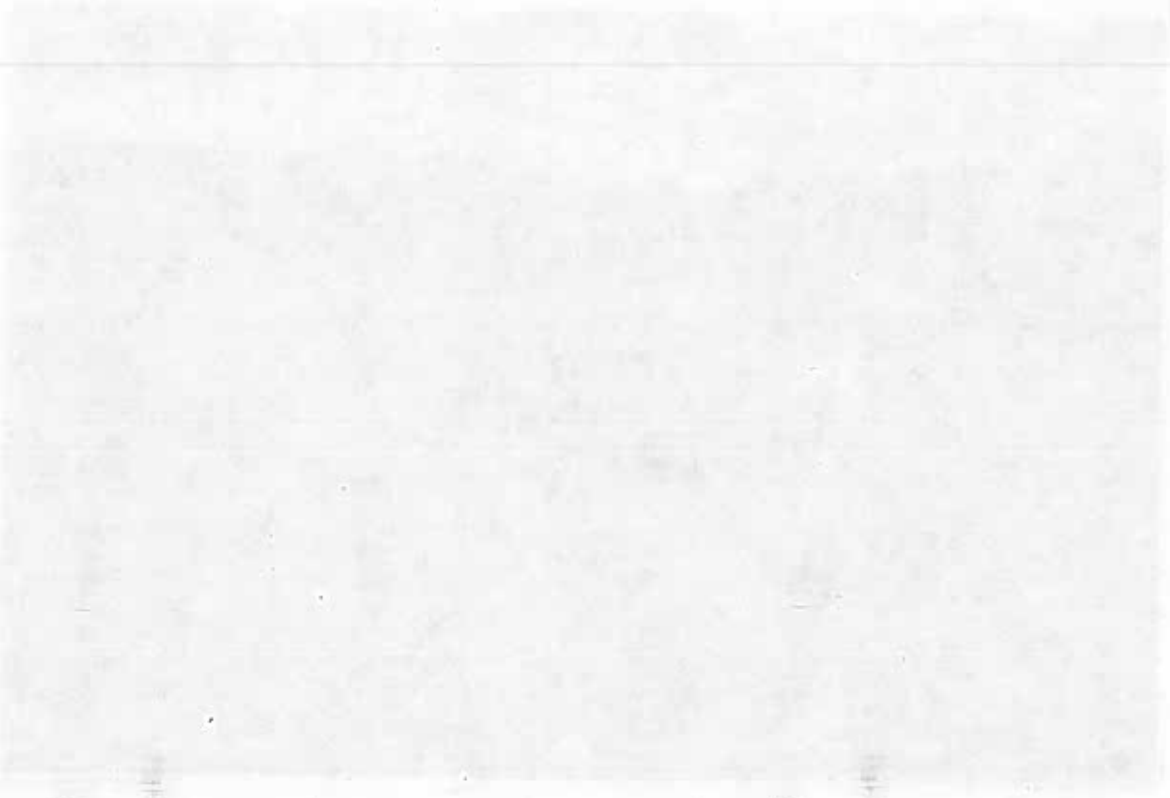
Comments: Potential annual production should be 200 pounds/acre in an average year

CANM Rangeland Health Evaluation Photos

Allotment Cahone Mesa
Polygon # 166
Date 8 / 2 / 2001







BLM, CANM Rev.4/3/0

Canyons of the Ancients National Monument
Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): MADSEN, WEAVER, ROWLAN — Date: 08-07-01 — Polygon # 109

Allotment: ~~Cahone Mesa~~ Yellow Jacket — Pasture:

Location: GPS lat 37°24.830' long 108°58.734' Legal NE S 6 T 37N R 19W

Aerial Photo: 1-2-12 — Site Photos - Roll: 7 — Number: 13 #14

Soil Map Unit/Component Name: MACK — Number: 70

Range/Ecological Site Name: Alkali Flat — Number: 414

Slope: 7% — Aspect: 164 — Topographic Position: Hillside — Elevation: 5400

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: Fine sandy loam — Parent material: Sandstone

Depth: Very shallow <10" ____ Shallow 10-20" ____ Moderate 20-40" ____ Deep >40" X

List diagnostic horizons in profile and depth:

1 13-18" clay film and CaCO3 — 2 18+" common concretions of CaCO3 — 3 — 4

Evaluation Area Determination:

Surface texture: Fine sandy loam — Parent material: Sandstone

Depth: Very shallow <10" ____ Shallow 10-20" X Moderate 20-40" ____ Deep >40" ____

List diagnostic horizons in profile and depth: tried 4 x's but kept hitting rock @ 12" (looks like sandstone boulders have fallen down...) sand has been blown on

1 10" - CaCO3 beginning — 2 12" - Rock — 3 — 4

Avg. annual PPT: Cortez 13", Hovenweep 11" — Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: Light: rabbit; numerous ant piles

Livestock Use: Heavy: cattle

Offsite influences on area and significance e.g. roads, chainings, fire: Road nearby, fence w/ oak marker

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	In
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	2	2	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled, exposed plant roots are common	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	3	3
Comments							
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	2	2
Comments							
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	5	5
Comments							
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	4	
Comments							
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3
Comments							
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	3	3
Comments							

Polygon

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	I
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	3	3	3
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		2	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	5	5	5
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			2
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			4
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		2	2
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			2
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			1
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	I… In…
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			3
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken .	Largely intact and nearly matches site capability	3	3	3
Comments	Dominated by poorly developed crust present							

Indicator Summary:	Soil/Site Stability	Hydrologic Function	I… In…
1. Extreme			1
2. Moderate to Extreme	2	(4)	(3)
3. Moderate	(4)	5	4
4. Slight to Moderate	1		1
5. None to Slight	3	3	1
	10	12	

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: MIDDLETON, M., WEAVER | Date: 08-07-01 | Polygon #: 169

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect ____ of ____

meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
LF Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
GP SPCR	T			T			0														4.0	0.2	0.15	0.0
HIJA														0	T			1	0	0	19.5	1.0	0.25	0.2
SA ANTE6	2	1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	2	1	3	2	280	14	1.0	14
VUOC	0	0	0	T	0	0	0	T	0	0	0	T	T	T	T	T	0	0	1	0	49.5	2.5	1.0	2.5
FP CALOC	T							T													1.0	0.0	0.1	0.0
FA PLPAZ	T	T	T	T	T	T	0	T	T	T	T	T	T	T	0	T	T	T	0	0	20	1.0	1.0	1.0
FEC16	0	0	1	3	2	3	1	2	0	1	1	1	0	3	5	3	2	2	1	2	342	17.1	1.0	17.1
FEDE2	T								T	T	T	T			T			0		T	6.5	0.3	0.4	0.1
LEDE	T										T	T									1.5	0.1	0.15	0.0
IPPU4		T	T												T						1.5	0.1	0.15	0.0
DPCU	T	T		T	T	0	T		T	T	T	T		0	T	0		T	T		15	0.8	0.75	0.6
GIOP	T																				0.5	0.0	0.05	0.0
SAAU3									T				T			T					2.0	0.1	0.2	0.0
QUSA2 seedling		T											T	T	T	T					2.5	0.1	0.25	0.0
Bare soil without canopy	6	6	7	5	4	4	6	4	2	2	4	4	3	4	3	4	1	3	4	3	790	39.5	1.0	39.5
Groundcover: (total groundcover should equal 100%)																								
Cyanbac. crust	0	0	0	T	T	0	1	1	2	3	2	3	3	0	0	1	3	0	1	2	242	12.1	1.0	12.1
Moss		0		T	T		0	T	1	0	0	0	T		T		0	1	0	T	44	2.2	0.75	1.6
Lichen	0	0	0	T			T	T	0	0	0	0	0	T	T	T	0	T	T	T	31.5	1.6	0.9	1.4
Litter	4	3	2	3	6	6	3	5	5	4	3	2	3	6	7	5	5	6	5	5	880	44	1.0	44
Wood																								
Basal Veg	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	10	0.5	1.0	0.5
Bare Soil	6	6	7	5	4	4	6	4	2	2	4	4	3	4	3	4	1	3	4	3	790	39.5	1.0	39.5
Gravel <3 in.	T	T	0	2	T	0	0	T	0	0	0	0	0	T	T	T	T	T	T	T	49.5	2.5	1.0	2.5
Cobble 3-10 in																								
Stone 10-24 in.																								
Boulder >24 in.																								
Bedrock																								

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
0	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
1	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
2	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
3	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
4	35.1 - 45% cover	40.0%	X	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

es common in the evaluation area that were not measured on the transect:

Line Intercept

Observers: MADSEN, WEAVER, RICHMAN **Date:** 06-07-01 **Polygon #:** 169

Line Length: 30 m **Transect** 1 **of** 1

Species Codes:

	GUSAR2			ATCO																	
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	745	757	12	1845	1846	1															
	1814	1828	(14)	2644	2679	35															
	1985	1988	3																		
	2033	2052	19																		
	2078	2092	14																		
	2211	2229	18																		
	2455	2470	(15)																		
Juniper	<1%																				
Total Intercept			(29) Alive 66			36															
% Cover			(1%) Alive 2%			1%															

Circle intercept values that are standing dead material

	Species Codes:																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter

Production Data Sheet

Observers: Weaver, Rohman, Madsen	Date: 08/07/01	Polygon #: 169
Transect length: 30 meters	Frames per transect: 20 @ 20x50 cm	Transect 1 of 1

Growth form	1* (0.0)	2 (1.5)	3 (3.0)	4 (4.5)	5 (6.0)	6* (7.5)	7 (9.0)	8 (10.5)	9 (12.0)	10 (13.5)	11* (15.0)	12 (16.5)	13 (18.0)	14 (19.5)	15 (21.0)	16* (22.5)	17 (24.0)	18 (25.5)	19 (27.0)	20* (28.5)	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses	T / T			T			1							T	1 / 1			3	1	1	8.5		.45	3.82
Annual Grasses	2 / 3	2	2	1	2	2 / 1	1	4	3	3	5 / 4	2	2	2	2 / 2	2	4	3	5	3	11/10 / 51	1.1	.95	53.29
Perennial Forbs	T / T							T													1		.90	.9
Annual Forbs	1 / 1	T	1	1	2	2 / 1	1	2	2	3	2 / 2	1	2	1	3 / 3	2	1	1	1	2	9/7 / 30.5	1.14	.85	29.55
Shrub		T		T		3 / 3							T	T	7 / 3						10/6 / 8	1.67	.50	6.68

Correction factor = clip wt /est wt. [illegible]   Total production in lb/ac = [redacted] 4.46 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	17.06
Annual Grasses	237.70
Perennial Forbs	4.01
Annual Forbs	131.81
Shrub	29.79
Total Production	420.37

List the dominant species clipped for these growth forms:

Perennial Forbs:

Shrubs:

Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
0 meter	—	2
7.5 meter	—	2
15 meter	—	6
22.5 meter	—	3
28.5 meter	—	3

Samples should be < 1/4 " diameter and < 1/8" thick

$\bar{X}$ 3.2

Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: [illegible] | Date: [illegible] | Polygon number: [illegible]

Alkali Flat - 414

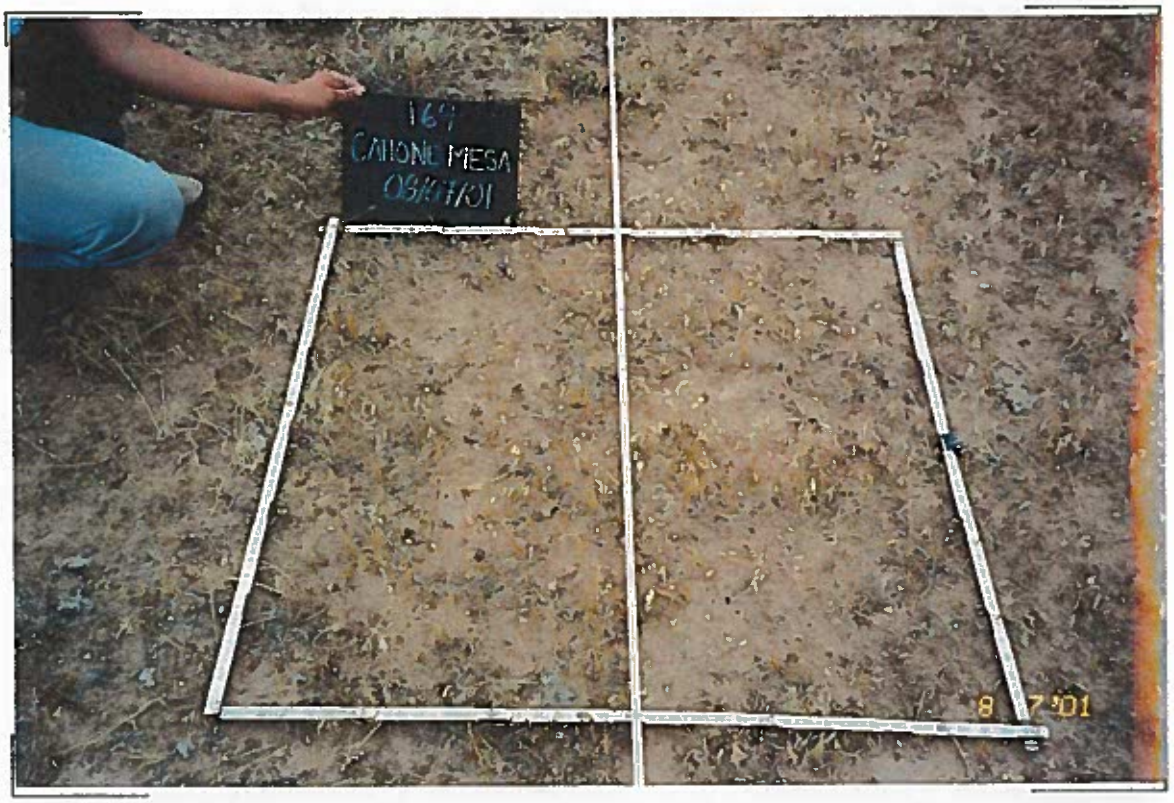
Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen		T		Juniper
Shrubs - sprouting				
Shrubs - non-sprouting	S	M	Greasewood, Shadscale	
Shrubs - non-sprouting	M	T - M	Fourwing, Winterfat, Sage, Greenmolly, Spiny hopsage	Pricklypear, rabbitbrush, Bearclaw cactus, claret cup cactus
Shrubs - invasive	M	T-M	Snakeweed	
Cool Season Bunchgrasses	S	T	Squirreltail, Needle&thread, Indian rice, Three-awn	Sandhill? bluegrass [illegible]
Warm Season Bunchgrasses	D	T	Alkali sacaton, Sand dropseed	
Warm Season Rhizomitous Grasses	S	M-S	Galleta	
Annual Grasses	T	D	Sixweeks fescue	Cheatgrass, Japanese brome
Forbs - annual	T	M	Indianwheat, Pepperweed	Russian thistle, [illegible], [illegible], Draba, Gilia
Forbs - perennial	M	T	Globemallow, Cymopteris	Calochortus
Forbs - Nitrogen fixing				
Noxious weeds				
Biological crusts	S	T - M	Cyanobacteria, Lichens, Moss	

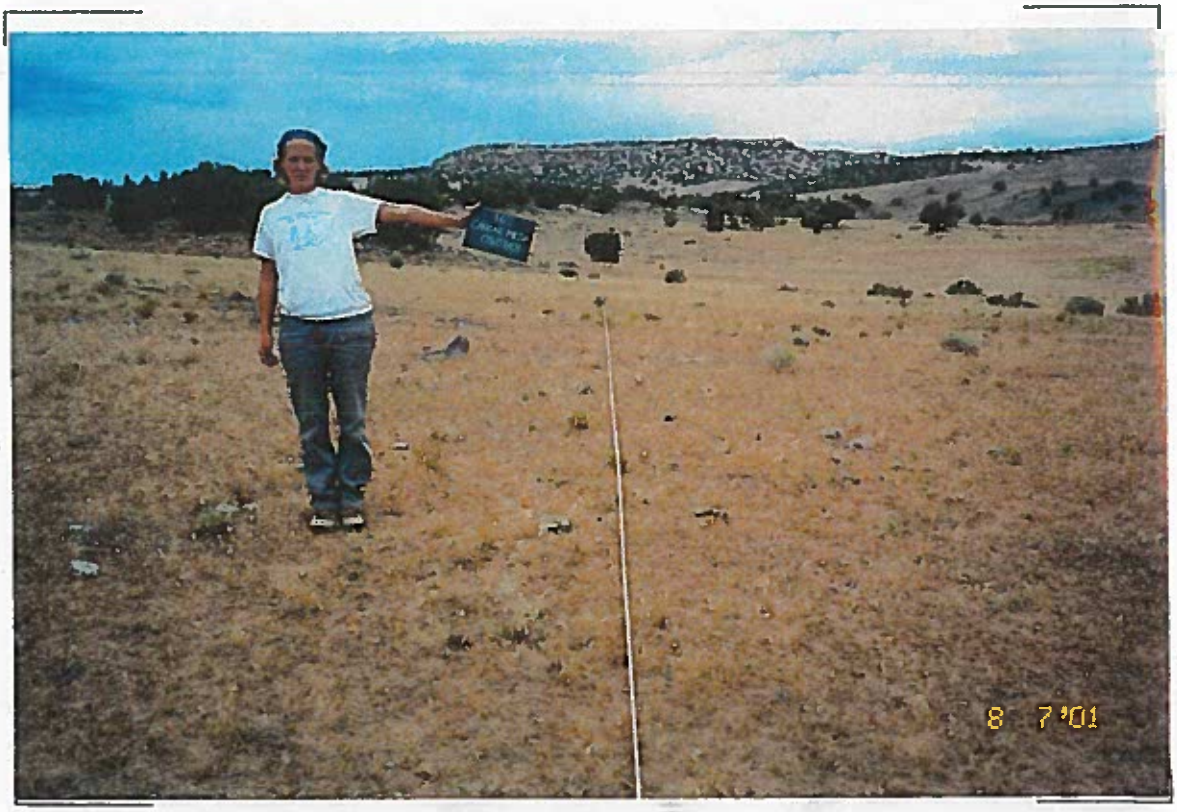
D - Dominant = 40 to 100% composition	* Potential based on ecological/range site description or ecological reference area
S - Subdominant = 10 to 40% composition	
M - Minor = 2 to 5% composition	Actual is for the area of evaluation
T - Trace = <2% composition	

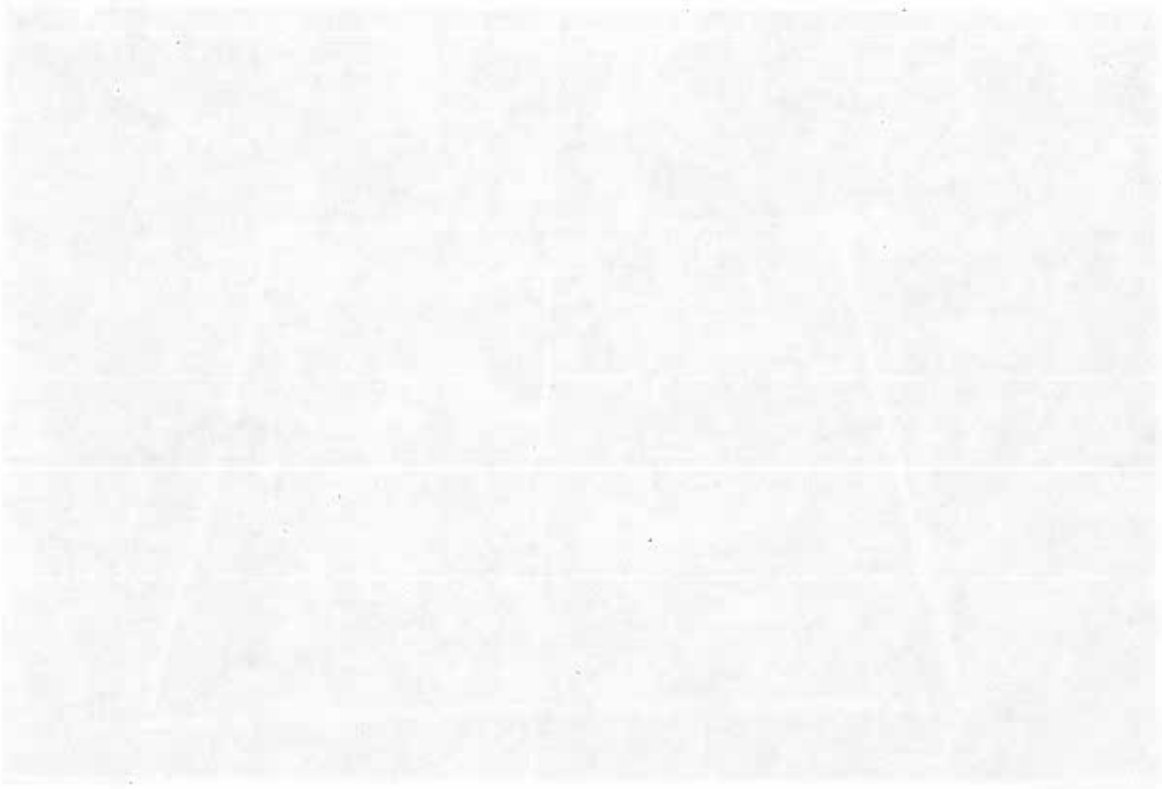
Comments: Potential annual production should be 650 - 800 pounds/acre in an average year

CANM Rangeland Health Evaluation Photos

Allotment Cahone Mesa
Polygon # 169
Date 8 / 7 / 2001







DONE

BLM, CANM Rev.4/3/0

Canyons of the Ancients National Monument

Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): Rahman Madsen (Weaver)		Date: 8/5/01	Polygon # 170
Allotment: (Cahone Mesa on photo board) Yellow Jacket		Pasture:	
Location: GPS lat 37° 24.792' long 108° 59.187'		Legal NW S6 T36N R 19W	
Aerial Photo: 1-2-12	Site Photos - Roll: 17	Number: 17 18	
Soil Map Unit/Component Name: Claysprings		Number: 22	
Range/Ecological Site Name: Saltdesert Breaks		Number: 406	
Slope: 1→7%	Aspect: 206°	Topographic Position: bench	Elevation: 5500'

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: Very Stony Clay Loam — Parent material: Residuum from Morrison shale

Depth: Very shallow <10" X Shallow 10-20" X Moderate 20-40" ___ Deep >40" ___

List diagnostic horizons in profile and depth:

1	2	3	4
Rock fragment content 5-60% 0-3 in	Gypsum Crystals 9-18in	Weathered Morrison Shale 6-20 in	

Evaluation Area Determination:

Surface texture: Very stony clay loam — Parent material: sandstone - colluvium

Depth: Very shallow <10" ___ Shallow 10-20" X Moderate 20-40" ___ Deep >40" ___ (tried 3 times) - might not be on bedrock

List diagnostic horizons in profile and depth:

1	2	3	4
7" - light $CaCO_3$	10" decomposing sandstone		

Avg. annual PPT: Cortez 13", Hovenweep 11" — Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: Minimal

Livestock Use: heavy

Offsite influences on area and significance e.g. roads, chainings, fire: road nearby, fence runs thru polygon

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	In
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	3	3	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled. exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	2	2	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	3	3	
Comments								
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	2	2	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	4		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	2	2	2
Comments								

Polygon "

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	I
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	3	3	3
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		2	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	5	5	5
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site, and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			3
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site			3
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		2	2
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			3
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			1
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	I In
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			3
Comments								
18. Biological Crusts	Found only in protected areas. very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	3	3	3
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	E Int
1. Extreme			1
2. Moderate to Extreme	3	5	2
3. Moderate	4	5	6
4. Slight to Moderate	1		
5. None to Slight	2	2	1
	10	12	

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: Weaver, Mason, Rohman | Date: 08/08/01 | Polygon #: 170

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

	meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
LF	Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
Gr	HIJA	1			1	0	0	1				1	1	1	0						1	79	4.0	.5	2
	SPAI						1	1	2									T	0		T	44	2.2	.3	.7
GA	ANTE6	2	2	1	2	1	1	3	2	4	2	4	1	2	1	2	2	T	2	2	2	385	19.0	1	19
	VUOC	0	1	1	1	1	0	2	1	0	T	0	0	0	0	T	T		T		T	93.5	4.7	.9	4.2
Fr	OXLI			1																		10	.5	.05	—
	Calochortus						T	T	T	T	T		0	0	T				T	T		10	.5	.5	.2
	PHLO 2									0		0		T								6.5	.3	.15	—
S	GIA2													T	T	T	T	T				2.5	.1	.25	—
FA	CHIN2														T							.5	—	.5	—
	LEDE										0	T			T							4	.2	.15	—
	GIOP																	1			T	10.5	.5	.2	.1
	CEOR 2							T	0		T	T			T		1	T	0	0		21.5	1.1	.45	.5
	AAFF	T	T	T									T									2	.1	.2	—
	DRCU	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T			9	.4	.9	.4
	DEPI	T		T	T	0	T						T									5	.2	.3	.1
	ERCI6	3	2	1	3	2	0	1	1	1	4	0	0	0	T	T	0	1	T	0	2	229	11.4	1	11.4
	PLPA 2	T		T	T	0	0	T	T	T		T	T	T	0	T	T	0	T	T	T	19	1.0	1	1.0
Bare soil without canopy		2	0	T	1	5	4	1	4	2	3	4	2	3	5	5	7	2	6	4	2	623.5	31.2	1	31.2
Groundcover: (total groundcover should equal 100%)																									
Cyanbac. crust			2	2		0	0	0	T		0		0	T			0	T	0	0		65.5	3.2	65	2.1
Moss			T	T			T	T	0		T		T	T	T						T	7.5	.4	.5	.2
Lichen		T	3	2	T	1	1	T	0	T	0	0	2	T	0	T	T	0	0	T	T	112.5	5.6	1	5.6
Litter		6	2	1	7	3	3	4	3	6	6	4	4	3	2	3	2	0	3	3	7	723	36.2	1	36.2
Wood		T																				.5	—	.05	—
Basal Veg		1	0	T	1	0	0	1	1	0	0	1	1	1	T	T	0	T	T	T	0	94	4.7	1	4.7
Bare Soil		2	0	0	1	5	4	2	5	3	3	4	2	4	6	5	7	2	6	5	2	686	31.3	1	34.3
Gravel <3 in.		1	0	0	1	0	1	T	1	0	T	1	1	2	1	1	1	1	0	2	0	219	10.9	1	11.0
Cobble 3-10 in			T				0								1	1						23.5	1.2	.2	.2
Stone 10-24 in.				1																		10	.5	.05	—
Boulder >24 in.			2	3				3					T									8.5	.4	.2	.1
Bedrock																									

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
0	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
1	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
2	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
3	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
4	35.1 - 45% cover	40.0%	X	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

es common in the evaluation area that were not measured on the transect:

Line Intercept

Observers: MADSEN, ROHMANN, WEAVER **Date:** 08-09-01 **Polygon #:** 170

Line Length: 30 m **Transect** 1 **of** 1

Species Codes: GUSA2

From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
059	070	11																					
092	097	(5)																					
100	109	(9)																					
113	134	(21)																					
145	156	(11)																					
201	211	10																					
224	231	(7)																					
279	286	7																					
342	352	(10)																					
374	387	13																					
1143	1160	(17)																					
1575	1590	(15)																					
1846	1855	(9)																					
2089	2092	3																					
2323	2338	15																					
2365	2383	(18)																					
2399	2402	(3)																					
2416	2419	(3)																					
2476	2485	9																					
2675	2693	(18)																					
2829	2845	(16)																					
Total Intercept		68 (162)																					
% Cover		2% (5%)																					

Circle intercept values that are standing dead material

	Species Codes:																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter

Production Data Sheet

Observers:	Date:	Polygon #:
Transect length: 30 meters	Frames per transect: 20 @ 20x50 cm	Transect _____ of _____

Growth form	0.0 ↓ 1*	1.5 2	3.0 ↓ 3	4.5 4	6.0 5	7.5 6*	9.0 7	10.5 ↓ 8	12.0 9	13.5 ↓ 10	15.0 11*	16.5 12	18.0 ↓ 13	19.5 14	21.0 15	22.5 16*	24.0 17	25.5 18	27.0 19	28.5 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses	T / T			T	T	2	3	3 / 4			3	2	3 / 3	T			T*	T		T	20.5	6.5/7.5 .87	.9	16.05
Annual Grasses	1 / 1	1	T / T	1	T	T	2	2 / 1	3	2 / 2	2	T	3 / 2	T	1	+	T	1	1	1	22.5	8.0/6.5 1.31	.95	28.00
Perennial Forbs			2 / 2			T	T	-- / T	T	T / T	T	T	T / T	T				T	T		7.5	1	.9	6.75
Annual Forbs	2 / 1	1	T / T	1	1	1	T	T	T	1 / 1		T	T / T	T	T	1	1	T	T	T	14	4/3 1.33	.85	15.83
Shrub		1	2 / 2							5 / 2			T / T	T	T	T	T				7.5	7.5/4.5 1.5	.35	3.94

Correction factor = clip wt /est wt.

Total production in lb/ac = [redacted] x total dry wt. 4.46

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	71.58
Annual Grasses	124.88
Perennial Forbs	30.10
Annual Forbs	70.60
Shrub	17.57
Total Production	314.73

List the dominant species clipped for these growth forms:

Perennial Forbs:

Shrubs:

Soil Stability Rating Form

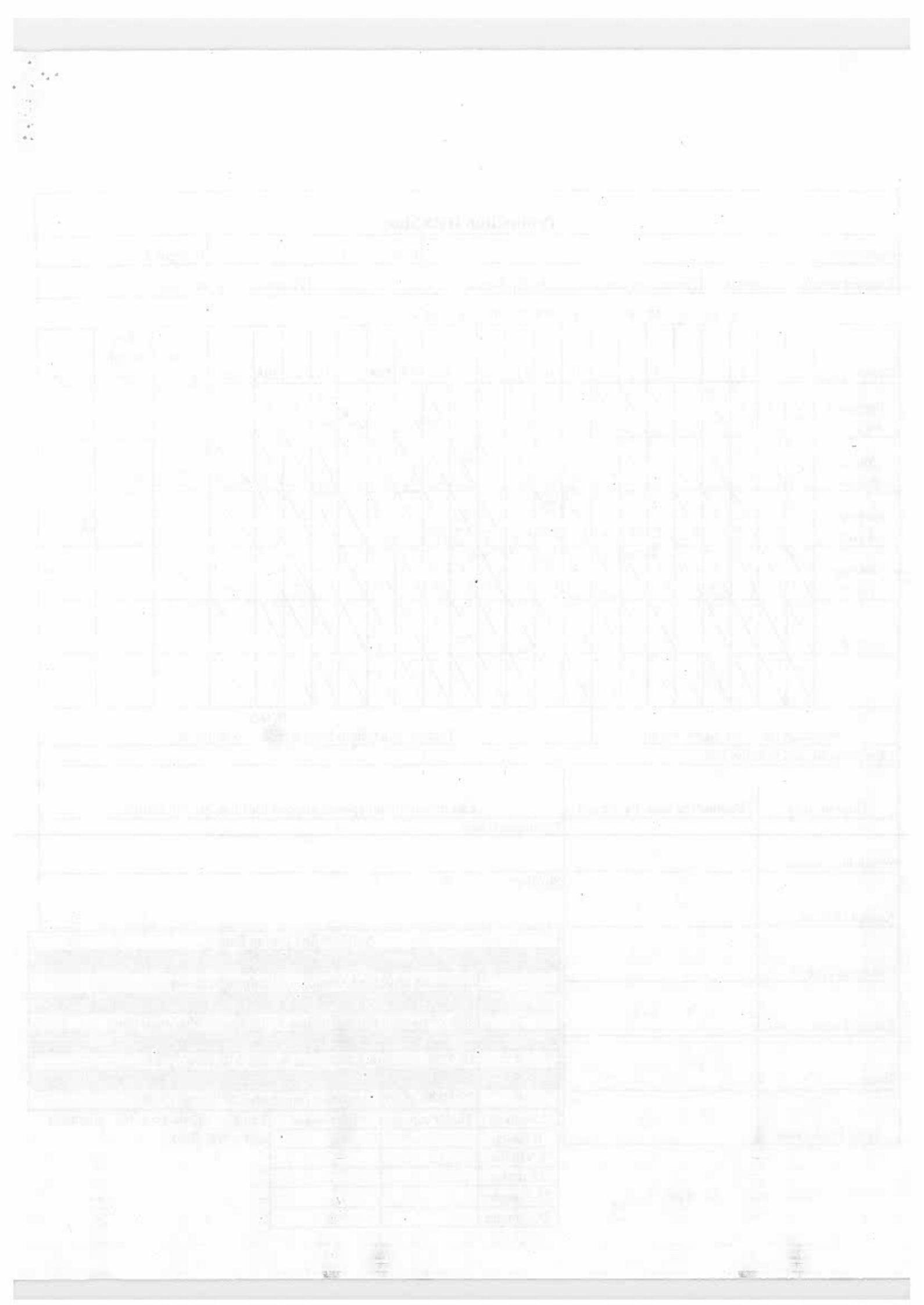
Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
0 meter		6
7.5 meter	N/A	2
15 meter	N/A	2
22.5 meter		1
28.5 meter		3

Samples should be < 1/4 " diameter and < 1/8" thick

* estimated out of the field

7



Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: Mansen, Rohman, Weaver | Date: 08-09-01 | Polygon number: 170

Saltdesert Breaks - 406

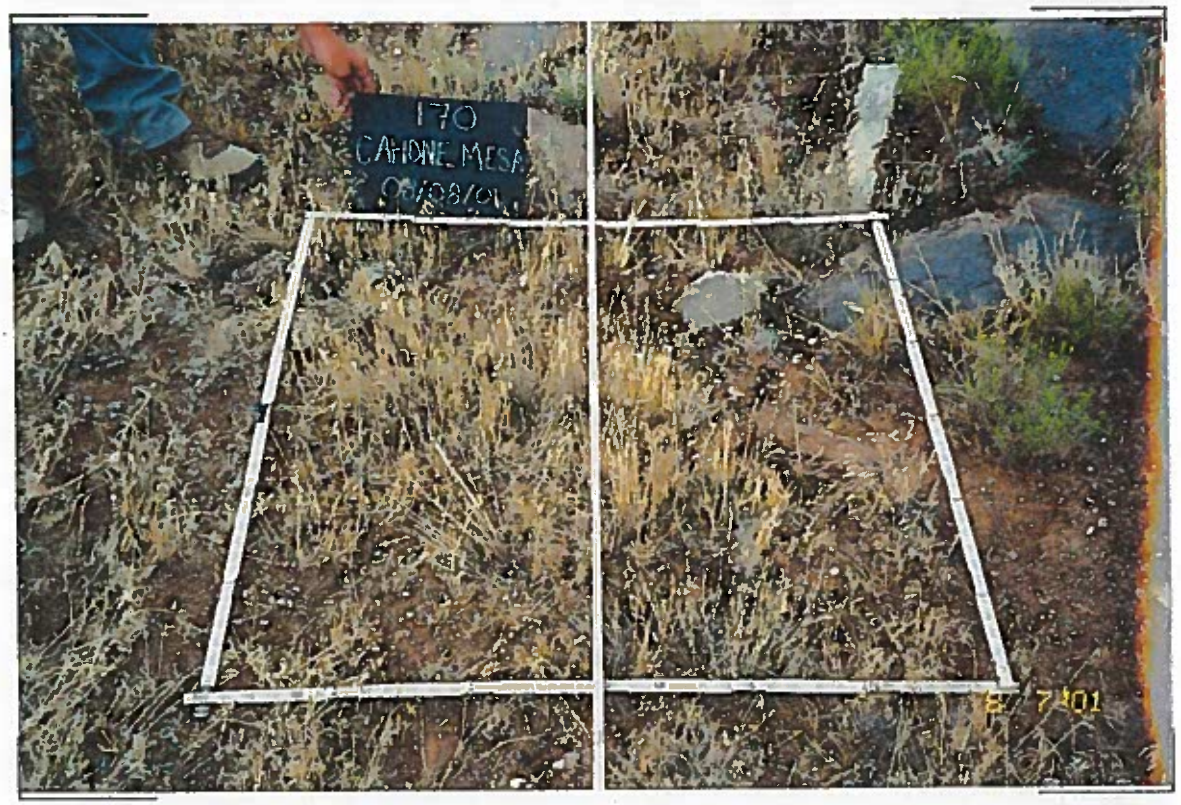
Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen	M	T	Utah Juniper	
Shrubs - sprouting	M	T	Rabbitbrush	
Shrubs - non-sprouting	D	M	Shadscale	
Shrubs - non-sprouting	M	T-M	Fourwing, Winterfat, Sage	Saltbrush, green Molly, greasewood, yucca, cactus
Shrubs - invasive		M-S		Snakeweed
Cool Season Bunchgrasses	M-S	M	Salina wildrye, Ricegrass, Squirreltail, Needle&thread, Sandburg, Threeawn	Muttongrass
Warm Season Bunchgrasses	S	T	Alkali sacaton	
Warm Season Rhizomatous Grasses	D	M-S	Galleta	
Cool Season Rhizomatous	M	—	Westernwheat	
Annual Grasses		D		Cheat, VUOC
Forbs - annual		M		Draba, DEPI, Cranesbill, GIOP, allysum, pepperweed
Forbs - perennial	M	T	Onion, Phlox, Primrose, Princesplume, Globemallow, Sego, Cymopteris, Larkspur	flax, Sand aster, umbrella wort
Forbs - Nitrogen fixing		—	Locoweed	
Noxious weeds		—		
Biological crusts	S	M	Cyanobacteria, Lichens, Moss	

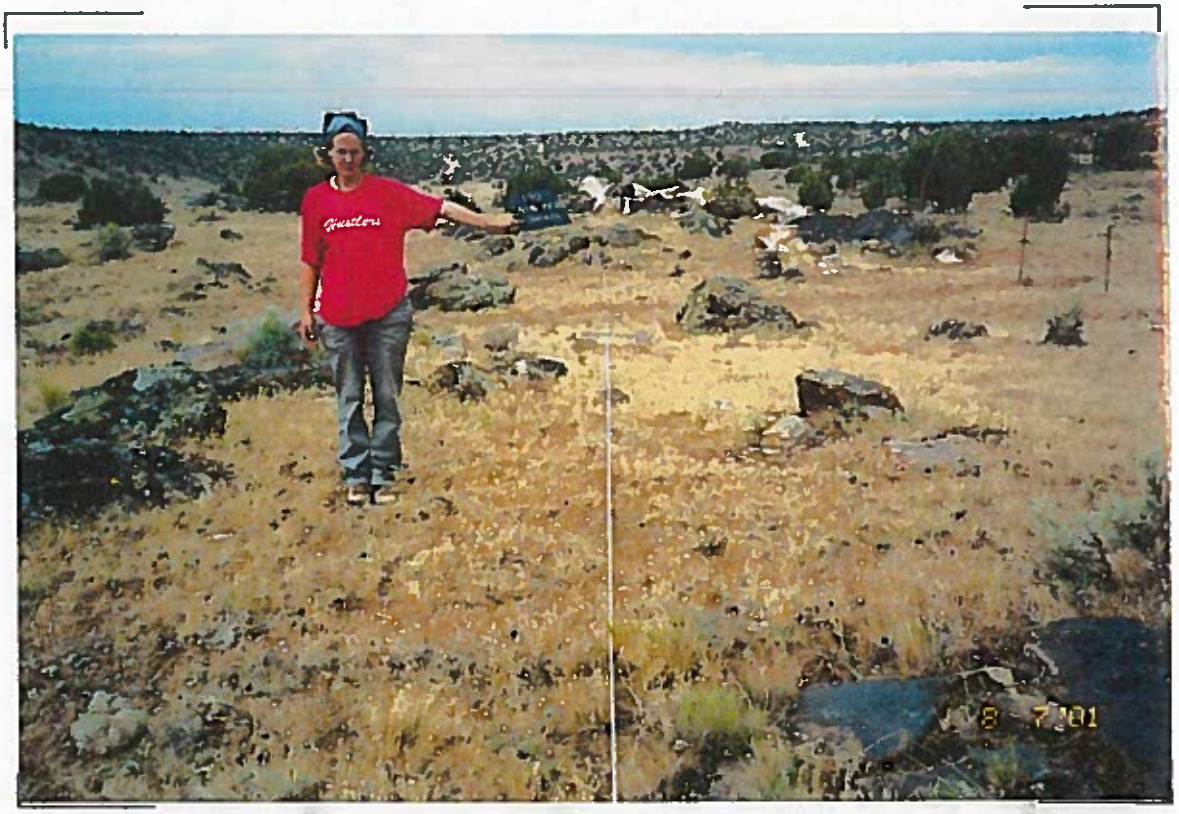
D - Dominant = 40 to 100% composition	* Potential based on ecological/range site description or ecological reference area
S - Subdominant = 10 to 40% composition	
M - Minor = 2 to 5% composition	Actual is for the area of evaluation
T - Trace = <2% composition	

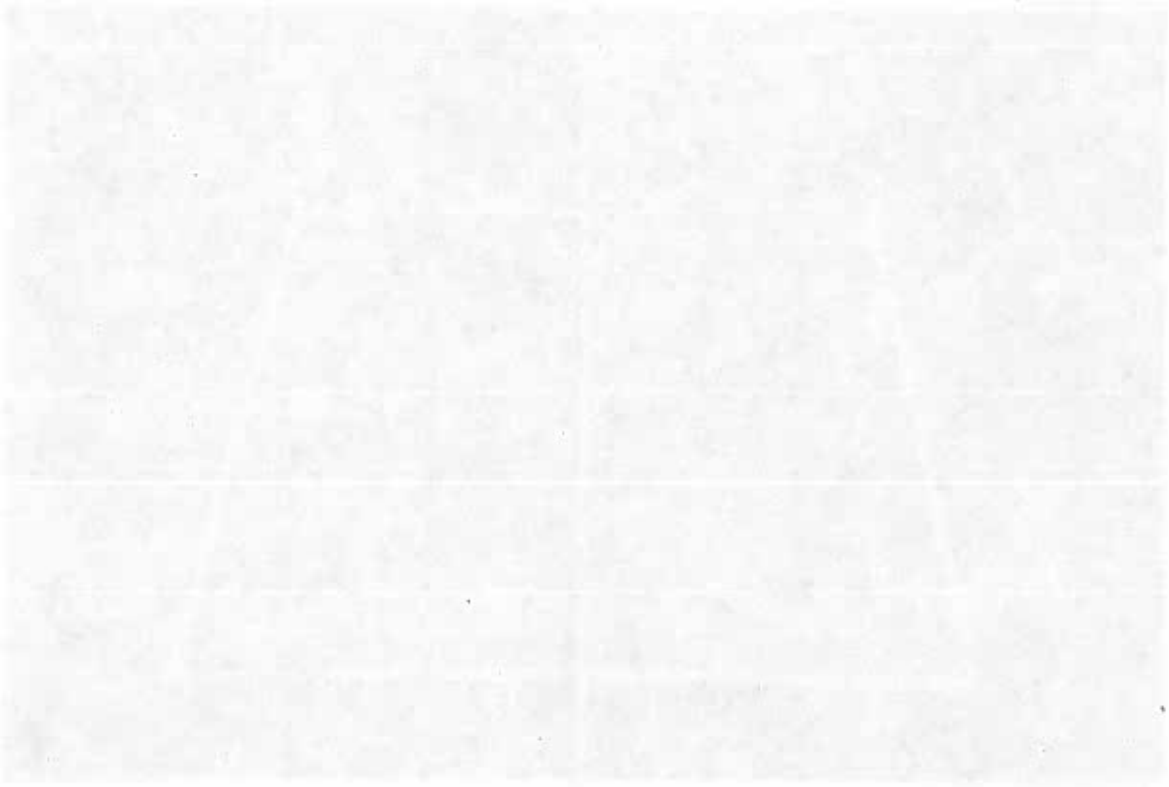
Comments: Potential annual production should be 200 pounds/acre in an average year

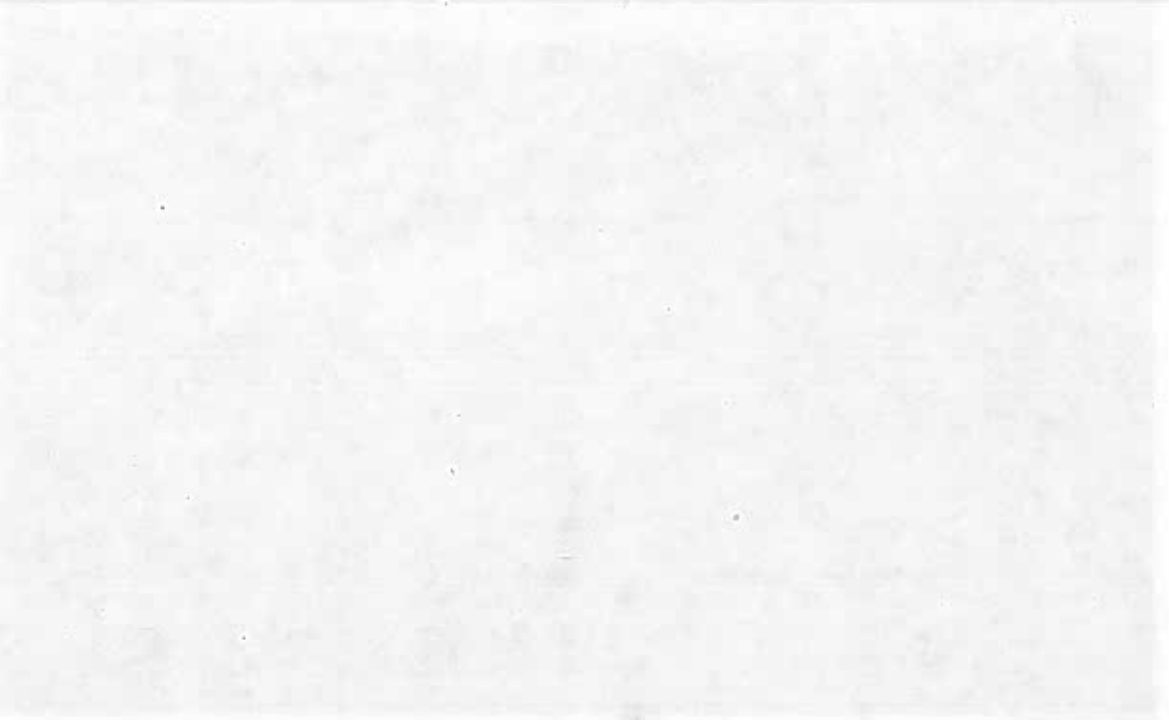
CANM Rangeland Health Evaluation Photos

Allotment Cahone Mesa
Polygon # 170
Date 8 / 8 / 2001









Canyons of the Ancients National Monument

Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): HASPELS, STONER		Date: 6/4/01	Polygon # 51
Allotment: YELLOW JACKET		Pasture:	
Location: GPS lat N37°21.746' long W108°56.690'		Legal SW/S 21 T36N R 19W	
Aerial Photo: 1-3-8	Site Photos - Roll: 4	Number: 17	
Soil Map Unit/Component Name: FARB ROCK OUTCROP		Number: 31	
Range/Ecological Site Name: SHALLOW DESERT		Number: 409	
Slope: 3%	Aspect: 226°	Topographic Position: BENCH	Elevation: 5220

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: SANDY LOAM		Parent material: DAKOTA SANDSTONE	
Depth: Very shallow <10" __X__ Shallow 10-20" __X__ Moderate 20-40" ____ Deep >40" ____			
List diagnostic horizons in profile and depth:			
1 CARBONATES 0-3"	2 5-20" BEDROCK	3	4

Evaluation Area Determination:

Surface texture: SANDY LOAM		Parent material: SANDSTONE	
Depth: Very shallow <10" __X__ Shallow 10-20" ____ Moderate 20-40" ____ Deep >40" ____			
List diagnostic horizons in profile and depth:			
1 4" CALCIC HORIZON	2 10" BEDROCK	3	4

Avg. annual PPT: Cortez 13", Hovenweep 11"	Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet
Wildlife Use: MODERATE	
Livestock Use: LIGHT - MODERATE	
Offsite influences on area and significance e.g. roads, chainings, fire: road	
Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience __X__	

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	4	4	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Biot Integ
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	4	4	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	2	2	
Comments	Rock outcrops and bedrock frequent low perennial grass cover.							
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	4	4	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	4		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		4	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	3	3	3
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bio Integ
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	4	4	4
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		3	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	5	5	5
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			3
Comments	Perennial Grasses low.							
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			5
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		3	3
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			3
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			3
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Biotic Integri
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			4
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	4	4	4
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	Biotic Integri
1. Extreme			
2. Moderate to Extreme	1	1	
3. Moderate	1	3	5
4. Slight to Moderate	(6)	(6)	(3)
5. None to Slight	2	2	2
	10	12	10

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: HASPELS / STUNER | Date: 6/7/01 | Polygon #: 51

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of ____

meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
LF Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
G ACHY				T	T	1															11	0.6	0.15	0.1
ELEL5						0	1														13	0.6	0.1	0.1
G ANTE6	T	T	-	T	0	0	1	0	4	T	2	1	0	T	2	2	2	0	1	1	1775	8.1	0.95	6.1
VUOC						1	T	T	T			0	T		0	T	T	T	T	T	20.5	1.	0.6	0.1
F CYPE2																T					C		0.05	
F G10P	T	T				T	T	T	T		T						T			T	4.5	0.2	0.15	0.1
ERPA11					T		T					T									1.5	0.1	0.15	0.0
CACH2						T															0.5		0.15	-
DRCU							T									T	T		T		2.0	0.1	0.2	0.0
LAMA4							T	T				T									1.5	0.1	0.15	0.1
ERCI6														T	0	T	0				7.0	0.4	0.2	0.1
DEPI							0									T					3.5	0.2	0.1	0.1
IPPU4											T	T			T	T	T	T	T	T	4.0	0.2	1.1	0.1
CEOR2												0				T	T		T		4.5	0.2	0.2	0.0
LEDE															T		T				1.0	0.0	0.1	0
Bare soil without canopy	6	8	9	8	7	1	1	D	T	-	-	4	-	4	1	0	2	4	3	7	656.5	32.8	0.65	27.9
Groundcover: (total groundcover should equal 100%)																								
Cyanbac. crust	3	1	0	0	0	1	1	6	6	-	T	2	-	0	4	5	2	3	2	T	373	18.6	9	16.7
Moss	0	T			T	T	1	T			T	0		0	1		0		3	T	65	3.2	0.65	2.1
Lichen	-	T	T	T		T	6	1	0		T	0		0	0	1	2	0	0	T	104	3.2	0.8	2.6
Litter	0	1	0	0	1	8	7	3	4	A	9	4	7	0	4	3	4	0	2	2	702	35.1	1.0	35.1
Wood								T		T	0		3					T			34.5	1.7	.25	0.4
Basal Veg	T	T	-	T	T	0	0	T	T	T	T	T	T	T	T	0	T	T	T	T	17	0.8	.95	0.8
Bare Soil	6	8	9	8	8	1	1	0	T	T	0	4	-	4	1	0	2	4	3	7	670	33.5	0.95	31.8
Gravel <3 in.	0	0	0	2	1	0	T	T	-	-	-	T	-	0	T	0	0	2	0	1	86	4.3	0.8	3.4
Cobble 3-10 in																		0			3.0	0.2	.15	0.1
Stone 10-24 in.																								
Boulder >24 in.																								
Bedrock														5							50	2.5	.05	0.1

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	I	55.1 - 65% cover	60.0%
0	1.1 - 5.0% cover	3.0%	J	65.1 - 75% cover	70.0%
1	5.1 - 15% cover	10.0%	K	75.1 - 85% cover	80.0%
2	15.1 - 25% cover	20.0%	L	85.1 - 95% cover	90.0%
3	25.1 - 35% cover	30.0%	M	95.1 - 99% cover	97.0%
4	35.1 - 45% cover	40.0%	X	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

F	Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

ecies common in the evaluation area that were not measured on the transect:

Line Intercept

Observers: HASPELS STONER **Date:** 6/4/01 **Polygon #:** 51

Line Length: 30 m **Transect** 1 **of** _____

Species Codes:

	CHGR6			ERMI4			GUSA2			SAVE4			SAUT3			ATCO			SETR4		
#1	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	050	083	33	250	262	12	1085	1096	11	1270	1300	30	1305	1540	235	2014	2028		2823	2858	35
	748	810	62				2095	2102	7	1710	1896	186							2947	2961	14
	850	910	60				2170	2180	10	2960	3000	40									
	1435	1440	5																		
	2258	2270	12																		
	2735	2822	87																		
#2 ON BACK																					
#1			259			12			28			256			235			14			49
#2			66			—			—			—			—			—			
Total Intercept			325			12			28			256			235			14			49
% Cover			5.4%			0.2%			0.4%			4.3%			4%			0.2%			.8%

Circle intercept values that are standing dead material

ADDITIONAL SPECIES ON BACK

	Species Codes:																				
	PUST			CHGR6			CEMO2			FRAN2											
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
#2	170	301	131	765	787	22	955	1091	136	1574	1645	71									
				1957	2001	44	1275	1285	10	2089	2224	135									
							1351	1475	124												
							1941	2060	119												
							2844	2922	78												
					Total	66			467			206									
			2.8%			on front			7.8%			3.1%									

Production Data Sheet

Observers: Stoner, Haspels | Date: 6-4-01 | Polygon #: 51

Transect length: 30 meters | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

Growth form	0 1*	1.5 2	3 3	4.5 4	6 5	7.5 6*	9 7	10.5 8	12 9	13.5 10	15 11*	16.5 12	18 13	19.5 14	21 15	22.5 16*	24 17	25.5 18	27 19	28.5 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses				T	T	1 1	2						1								5	—	.60	3
Annual Grasses	T T	T		T	T	1 1	1	1	2	T	1 1	2	1	T	1	2 1	2	T	1	1	5.5 4.5 18.5	1.22	.95	21.44
Perennial Forbs																T					.5	—	.85	.42
Annual Forbs	T T	T			T		1	T			T T	T	1	T	T	T T	T	T	T	T T	2/2 8.5	—	.55	4.67
Shrub	T T				3	12 11	6						13		T	4 5					16.5 16.5 39	—	.5	19.5

Correction factor = clip wt /est wt.

Total production in lb/ac = 89.2 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	13.38
Annual Grasses	95.63
Perennial Forbs	1.90
Annual Forbs	20.85
Shrubs	86.97
Total Production	218.73

List the dominant species clipped for these growth forms:

Perennial Forbs:

Shrubs: Gusa2, ATCO

Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
1m	5	5
6m	5	5
11m	6	6
16m	6	5
20m	6	5
	5.6	5.2

Samples should be < 1/4 " diameter and < 1/8" thick

Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: HASPELS / STONER | Date: 6/7/01 | Polygon number: 51

Semidesert Juniper Loam or Shallow Desert - 113

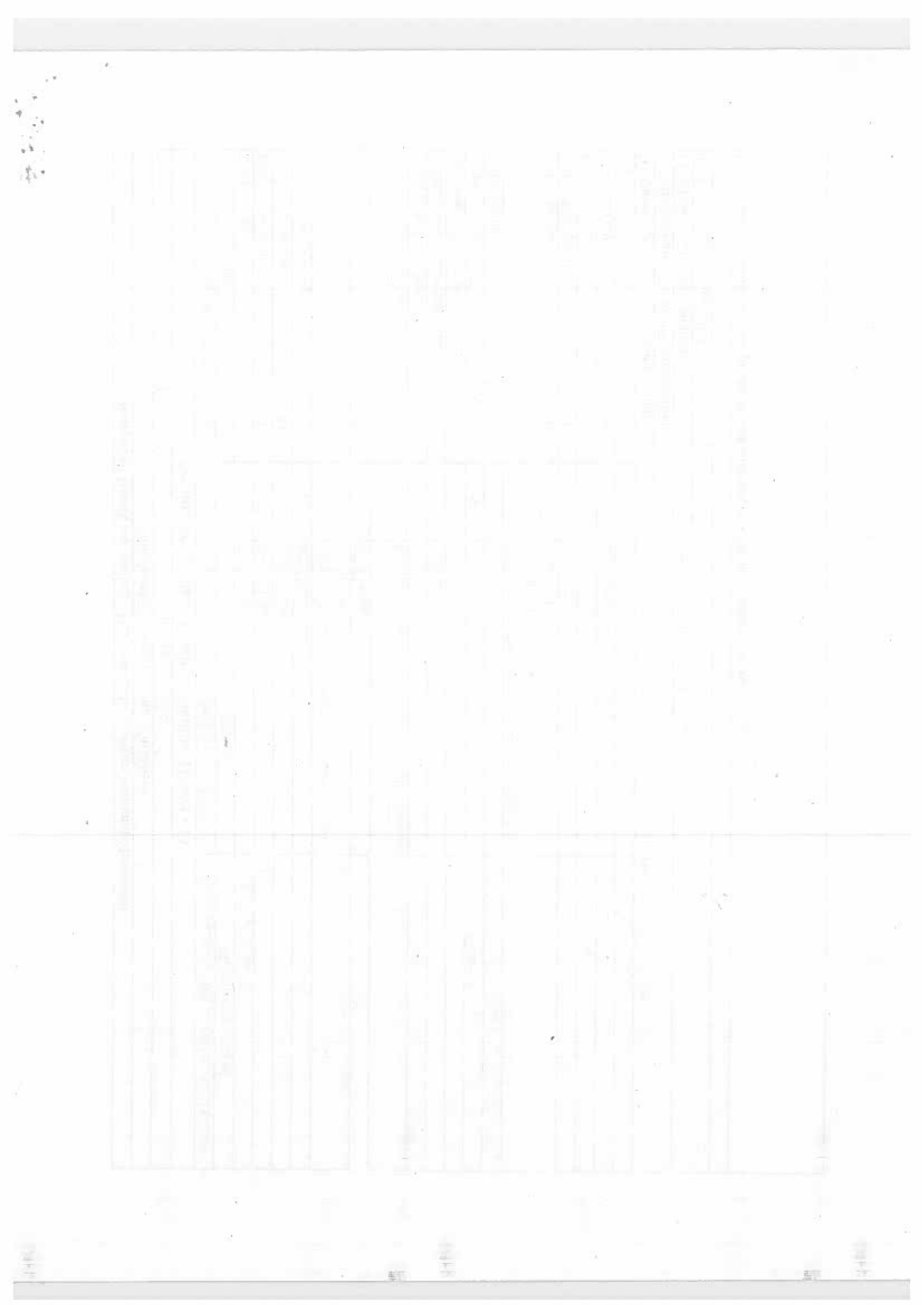
Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - evergreen	M	S	Utah Juniper	25% cover
Trees - evergreen	T	T	Pinyon Pine	
Shrubs - sprouting	M	M	Rabbitbrush	
Shrubs - non-sprouting	S	D	Shadscale Sage	
Shrubs - non-sprouting	S	S	Ephedra, Yucca, Black sage, Dwarf rabbitbrush, Prickleypear	cliffrose, mountain mahogany, skunkbush, greenewood
Shrubs - invasive	T	M	Snakeweed	
Cool Season Bunchgrasses	S	T	Ricegrass, Squirreltail, Needle&thread, Threeawn	New Mexican feathergrass
Warm Season Bunchgrasses				
Warm Season Rhizomatous Grasses	D	T	Galleta	
Cool Season Rhizomatous				
Annual Grasses		M		Cheat G weeks fescue
Forbs - annual		T		Gilia, Nothocalais, Hornhead, Crane's Bill, Indian Paintbrush
Forbs - perennial	M	T	Phlox, Princesplume, Globemallow, Cymopterus, Larkspur, Hairy goldenaster, Threadleaf groundsel	Ipomopsis fumata, false buckwheat
Forbs - Nitrogen fixing	T		Locoweed	
Noxious weeds				
Biological crusts	S	M	Cyanobacteria, Lichens, Moss	
Tree - deciduous				single leaf ash

D - Dominant = 40 to 100% composition
S - Subdominant = 10 to 40% composition
M - Minor = 2 to 5% composition
T - Trace = <2% composition

* Potential based on ecological/range site description or ecological reference area

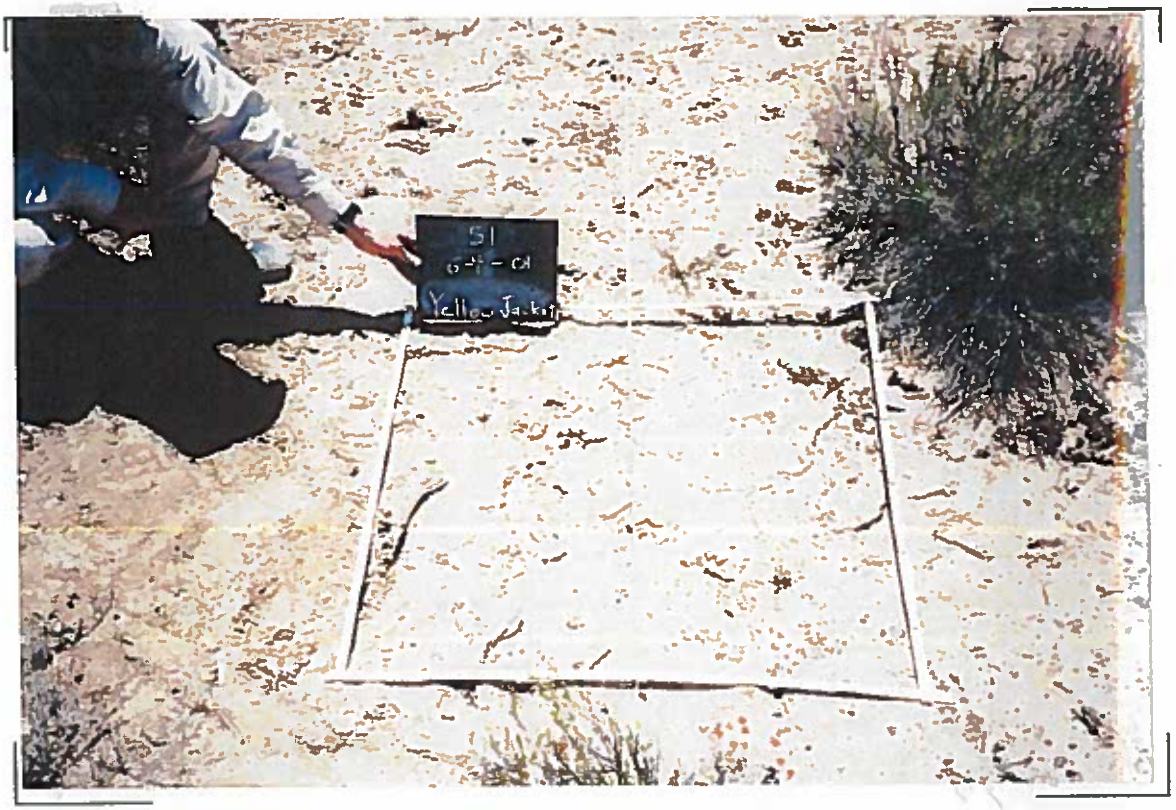
Actual is for the area of evaluation

Comments: Potential annual production should be 200 - 300 pounds/acre in an average year



CANM Rangeland Health Evaluation Photos

Allotment YELLOW JACKET
Polygon # 051
Date 6/4 / /2001



BLM, CANM Rev.4/3/01

DONE ✓

Canyons of the Ancients National Monument
Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): ||ASPELS STONER | Date: 9/19/01 | Polygon # 214

Allotment: YELLOWJACKET | Pasture:

Location: GPS lat long | Legal NE SE 3 T36N R 20W

Aerial Photo: 1-2-10 | Site Photos - Roll: 32 | Number: 56

Soil Map Unit/Component Name: RAVOLA CLAY LOAM | Number: 99

Range/Ecological Site Name: ALKALI BOTTOM | Number: 413

Slope: 3% | Aspect: 168° | Topographic Position: canyon bottom | Elevation: 5130

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: clay loam | Parent material: alluvium from sandstone & shale

Depth: Very shallow <10" ___ Shallow 10-20" ___ Moderate 20-40" ___ Deep >40" ✓

List diagnostic horizons in profile and depth:

1 0-20" clay loam | 2 20-24 sandy loam | 3 24-28" clay loam | 4 28-60" loamy sand silt loam

Evaluation Area Determination:

Surface texture: sandy clay | Parent material: sandstone

Depth: Very shallow <10" ___ Shallow 10-20" ___ Moderate 20-40" ___ Deep >40" ✓

List diagnostic horizons in profile and depth:

1 0-35" sandy clay loam | 2 35-50" sand | 3 50" creek bed rock | 4

Avg. annual PPT: Cortez 13", Hovenweep 11" | Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: light

Livestock Use: moderate

Offsite influences on area and significance e.g. roads, chainings, fire: old 2-track

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience ✓

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	BI Int
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	3	3	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bio Inte
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	3	3	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	2	2	
Comments								
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	2	2	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	4		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	2	2	2
Comments								

Polygon # 219

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	3	3	3
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		3	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	3	3	3
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced: and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			2
Comments	Don't have correct F/S form, but cheat is dominant. (with sage)							
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			4
Comments	Rabbitbrush decadent							
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		3	3
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			3
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			1
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			3
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	1	1	1
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	Bi Inte
1. Extreme	1	1	2
2. Moderate to Extreme	3	3	2
3. Moderate	4	7	5
4. Slight to Moderate			1
5. None to Slight	1	1	
	10	12	1

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

0840

changed from FP→FA (CHME3→CHGL3)

Cover Frequency Data Sheet

Observers: Stoner Hasiaels | Date: 9-10-01 | Polygon #: 214

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

	meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
LF	Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
G	ARPU9	0																				3	.2	.05	—
	HOJA																T				T	1	—	.1	—
F	ANTE6	2	3	4	3	2	2	1	2	3	5	2	1	1	3	3	3	2	5	4	2	520	26	1	26
	VUOC				0	0				0		T	+		0	0	1		0	1	0	41.5	2.1	.5	1.0
	POBA2																					.5	—	.05	—
EA	CHGL3	0	1	1	0	T				T		T	1	3	3	1	0	T		T		111.5	5.6	.7	3.9
Fa	ERCT6	0		1	1	1			3	1	1	4	4	3	4	2	3	2	1	1	1	333	16.7	.85	14.2
	GIO4																	T				.5	—	.05	—
EN	ASNU4	0	T												T	0	0		T		T	11	.6	.35	.2
Bare soil without canopy		8	3	2	1	6	T	6	0	2		4	3	2	2	6	5	7	4	3	8	723.5	36.2	.95	34.4
Groundcover: (total groundcover should equal 100%)																									
Cyanbac. crust												T	T									1	—	.1	—
Moss						T						T	T									1.5	.1	.15	—
Lichen													T									.5	—	.05	—
Litter		2	6	7	8	4	A	3	A	7	9	5	5	7	8	4	5	3	6	6	2	1204	60.2	1	60.2
Wood			0	0				1		1		1	2	1		0						69	3.4	.4	1.4
Basal Veg		2	0	0	1	0	T	T	T	T	1	T	T	T	0	T	T	T	0	1	T	53.5	2.7	1	2.7
Bare Soil		8	3	2	1	6	T	6	0	2		4	3	2	2	6	5	7	4	3	8	723.5	36.2	.95	34.4
Gravel <3 in.			0	0		T		T						T		T	0	T			T	12	.6	.45	.3
Cobble 3-10 in																									
Stone 10-24 in.																									
Boulder >24 in.																									
Bedrock																									

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
1	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
2	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
3	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
4	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
5	35.1 - 45% cover	40.0%	B	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

es common in the evaluation area that were not measured on the transect:

Production Data Sheet

Observers: HARPELS, STONER | Date: 9/10/01 | Polygon #: Z 4

Transect length: 30 meters | Frames per transect: 20 @ 20x50 cm | Transect 1 of ____

Growth form	0.0 W 1*	1.5 2	3.0 3	4.5 4	6.0 5	7.5 W 6*	9.0 7	10.5 8	12.0 9	13.5 W 10	15.0 11*	16.5 12	18.0 13	19.5 W 14	21.0 15	22.5 16*	24.0 17	25.5 18	27.0 19	28.5 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses	T / 1															T				T	2	.5	.85	.85
Annual Grasses	1 / 1	1	1	1	1	1 / 1	T	T	T	T / 1	1	T	T	T	T	1	T	1	T	T	15	25/3 -8	.95	11.4
Perennial Forbs	T	1	T	T	T			T		T	T	T	2	1	1 T	T	T		T		-			
Annual Forbs	T	T	2	1	1		T	1		T	T	1	T	T	T	T	T	T	T	T				
Shrub		20		21		85 / 48	T	10		31 / 28								8			135 S	119/76 1.6	.65	140.9
Annual Forbs	T	1	2	1	1			T	1	T	T	1	2	1	1	T	T	T	T	T	15.5	—	.40	6.2

Correction factor = clip wt /est wt.

Total production in lb/ac = 4.46 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	3.8
Annual Grasses	50.8
Perennial Forbs	
Annual Forbs	27.6
Shrub	628.4
Total Production	710.6

List the dominant species clipped for these growth forms:

Perennial Forbs: ~~EHYE3~~

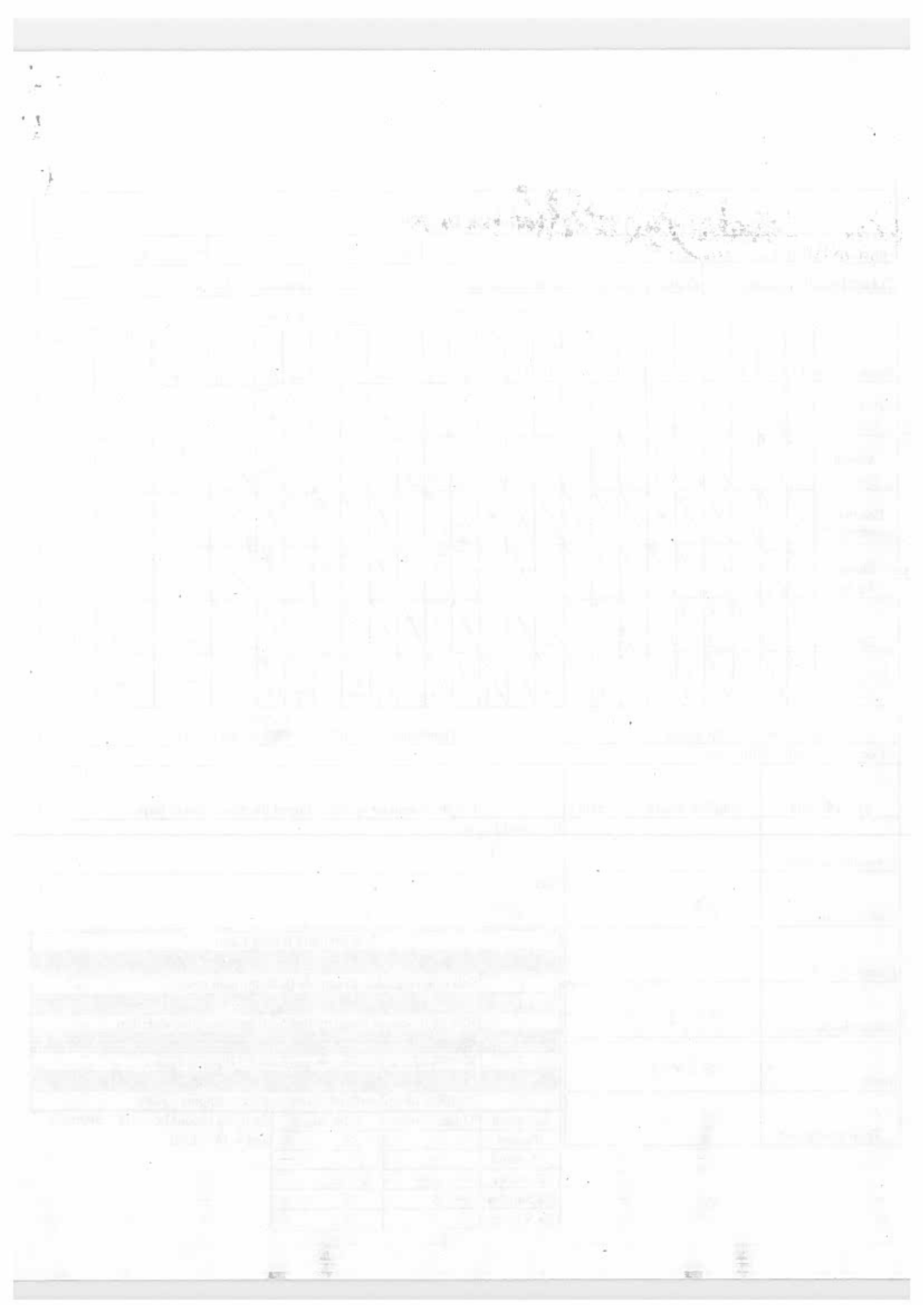
Shrubs: SAVE4, ~~SETR4~~ LYPA

Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
0 meter	5	4
7.5 meter	3	3
15 meter	~~5~~ 3	~~2~~ 2
22.5 meter	3	2
28.5 meter	3	2
	3.8	2.6

Samples should be < 1/4 " diameter and < 1/8" thick



Line Intercept

Observers: HASPELS, STONER | Date: 9/10/01 | Polygon #: 214

Line Length: 30 m | Transect 1 of ____

Species Codes:

	SETR4			CHNA2			SAVE4			LYPA1			ATCA2			GUSA2			SAUT3		
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	173	175	2	225	290	65	746	860	114	1299	1331	32	1561	1630	69	2194	2217	22	2771	2854	80
	224	245	21	948	1036	(88)	1714	1783	(69)							2447	2470	23			
	328	511	183	1048	1219	171															
	632	654	22																		
	720	799	79																		
	1331	1497	166																		
	2518	2601	83																		
	2668	2739	71																		
	2772	2810	38																		
	2978	2997	19																		
											From back										
											CHV1	8	2998	3000	2						
															1%						
Total Intercept			684			236 (88)			114 (69)			32			69			45			80
% Cover			23%			8% (5%)			4% (2%)			1%			2%			2%			3%

Circle intercept values that are standing dead material

SAUT3 Cover: 11%

* TURN OVER *

CHV18

2998	3000	

Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: Harper Stoner | Date: 9/11/01 | Polygon number: 2,4

Alkali Bottom - 413

Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen		T		SAVE3
Shrubs - sprouting		M		CHNA2 CHVI
Shrubs - non-sprouting	S	D	Greasewood	SETR4
Shrubs - non-sprouting	M	T	Fourwing, Shadscale, Nuttal Saltbush, Sage, Spiny hopsage	LYPA
Shrubs - invasive				GUSA2
Cool Season Bunchgrasses	S		Sandburg bluegrass, Squirreltail, Wildrye	
Warm Season Bunchgrasses	D	T	Alkali sacaton, Sand dropseed	
Cool Season Rhizomitous grasses	M		Sedges, Rushs	
Warm Season Rhizomitous grasses	M	M	Galleta, saltgrass	
Annual Grasses		D		BOBA2 Chin+ VUOC MOA
Forbs - annual		Th		ERIG POOL
Forbs - perennial	M	M	Globemallow, Evening primrose	CHFE3
Forbs - Nitrogen fixing				
Noxious weeds				
Biological crusts	S		Cyanobacteria, Lichens, Moss	

D - Dominant = 40 to 100% composition	* Potential based on ecological/range site description or ecological reference area
S - Subdominant = 10 to 40% composition	
M - Minor = 2 to 5% composition	Actual is for the area of evaluation
T - Trace = <2% composition	

Comments: Potential annual production should be 400 pounds/acre in an average year

Canyons of the Ancients National Monument

Rangeland Health Evaluation Summary Worksheet - Evaluation Area

DONE ✓

Part 1. Area of Interest Documentation:

Observer(s): Stoner, Haspels | Date: 9-6-01 | Polygon # 215

Allotment: Yellow Jacket | Pasture:

Location: GPS lat 37°22.638' long 108°59.469' Legal NWSW T36N R19W

Aerial Photo: 1-2-10 | Site Photos - Roll: 20 | Number: 24, 25

Soil Map Unit/Component Name: Clayspring | Number: 22

Range/Ecological Site Name: Saltdesert Breaks | Number: 406

Slope: 5% | Aspect: 214° | Topographic Position: rolling hills in Canyon | Elevation: 5240

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: very stoney clay loam | Parent material: Morrison Shale

Depth: Very shallow <10" X Shallow 10-20" X Moderate 20-40" ___ Deep >40" ___

List diagnostic horizons in profile and depth:

1 0-3 strongly effervescent | 2 Rock Frag 5-60% 0-3" | 3 Gypsum crystals 9-18" | 4 weathered shale 6-20"

Evaluation Area Determination:

Surface texture: Extremely Stoney | Parent material: Morrison Shale

Depth: Very shallow <10" ___ Shallow 10-20" X Moderate 20-40" ___ Deep >40" ___

List diagnostic horizons in profile and depth:

1 gravel and cobble throughout | 2 3-5" calcic deposits | 3 bottomed out @ 15" | 4

Avg. annual PPT: Cortez 13", Hovenweep 11" | Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: light

Livestock Use: Light to Moderate

Offsite influences on area and significance e.g. roads, chainings, fire: none

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Int
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	3	3	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bio Inter
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled. exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	2	2	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	3	3	
Comments								
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	4	4	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	3		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		2	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	3	3	3
Comments								

Polygon # 12

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	B Int
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	2	2	2
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		3	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	5	5	5
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced: and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			3
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			3
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		2	2
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			3
Comments								
16. Invasive Plants	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			2
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			3
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	1	1	1
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	Bi Inte
1. Extreme	1	1	1
2. Moderate to Extreme	2	(4)	3
3. Moderate	(4)	4	(5)
4. Slight to Moderate	1	1	
5. None to Slight	2	2	1
	10	12	1

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: HASPELS, STONER | Date: 9/10/01 | Polygon #: 215

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

LF	Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
	meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
G	HIJA		1				0	3	0			1	0	1	2	1		1		T	T*	110	5.5	.6	3.3
SH	ANTE6	0	0	0	1	0	0	1	1	T	0	T	T	T	0	0	1	1	2	2	1	126	6.3	1	6.3
	BOBAZ																		T			.5	—	.05	—
FP	unk Calochortus												0			0	T	T		T		7.5	.4	.25	.1
FA	~~EHFC~~ → CHGL13	0	T		0									0		0	0	1	0	1	1	48.5	2.4	.5	1.2
FP	SPCO	T	T	1										1				T			T	12.5	.6	.3	.2
FP	CYPU2							0		0	0	0		0	1							25	1.2	.3	.4
Fa	DEPI																	T				.5	—	.05	—
	SIAN2								T			T						T		T		2	.1	.2	—
Fa	PLPA2	T				T	1	0	T	0	0	T	T			T	T	T	0		T	26.5	1.3	.7	.9
	ERIC.	T	0	T		1	0		0	0		T	0	0	0		0					35.5	1.8	.6	1.0
	LAMA4		T		T	T		T	T	T	T	T	T	T		0		1				8.5	.4	.6	.2
	GRIP							T											T			1	—	.1	—
	APTE								T								T					1	—	.1	—
FN	ASNU4				0																	3	.2	.05	—
Fa	LEAN3																	T				.5	—	.05	—
Bare soil without canopy		5	5	5	6	4	2	2	3	3	4	4	5	3	4	4	2	2	1	2	3	670	34.5	1	34.5
Groundcover: (total groundcover should equal 100%)																									
Cyanbac. crust						T	1			+		0	T			1	2	2	3	0	1	102.5	5.4	.55	3.0
Moss																									
Lichen							1			T		T				T	T	0	1		T	25.5	1.3	.4	.5
Litter		0	3		1	1	0	5	0	T	0	1	0	0	0	1	0	0	1	0	0	173.5	8.7	1	8.7
Wood																									
Basal Veg		T	T	0	T	1	T	0	T	T	T	0	+	T	0	T	T	0	T	T	1	22.5	1.1	1	1.1
Bare Soil		5	5	6	7	4	2	2	3	3	4	4	5	3	4	4	2	2	1	2	3	710	35.5	1	35.5
Gravel <3 in.		4	1	3	2	4	5	2	5	6	4	3	5	5	3	3	4	4	2	5	6	760	38	1	38
Cobble 3-10 in		1	1		0	1	1	1	2	1	2	1		2	3	1	2	1	2	2		243	12.2	.85	14.4
Stone 10-24 in.																									
Boulder >24 in.																									
Bedrock																									

* estimated out of the field

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
1	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
2	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
3	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
4	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
5	35.1 - 45% cover	40.0%	B	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

es common in the evaluation area that were not measured on the transect:

Line Intercept

Observers: HASPELS, STONER | **Date:** 9/10/01 | **Polygon #:** 215

Line Length: 30 m | **Transect** 1 **of** _____

Species Codes: GUSA2 | ATGA

	GUSA2			ATGA																	
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	48	60	(12)	682	693	11															
	210	221	11	2030	2049	19															
	354	369	(15)																		
	565	572	(7)																		
	778	780	2																		
	1090	1097	7																		
	1264	1276	12																		
	1874	1876	(2)																		
	2025	2051	(6)																		
	2091	2100	6																		
	2391	2403	12																		
	2427	2440	13																		
	2612	2633	21																		
Total Intercept			84 (42)			30															
% Cover			3% (1%)			1%															

Circle intercept values that are standing dead material

Estimated total cover for PJ type:

SAUT3	—	%
PIED	—	%

	Species Codes:																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter

Production Data Sheet

Observers: Stoner Haspels | Date: 9-10-01 | Polygon #: 215

Transect length: 30 meters | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

Growth form	0 1*	15 2	3 3	45 4	6 5	75 6*	9 7	105 8	12 9	135 10	15 11*	165 12	18 13	195 14	21 15	225 16*	24 17	255 18	27 19	285 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses		T				T / T	3	1			1 / 1	T	1	1	1		1		T	T / T	11.5	1	.40	4.6
Annual Grasses	T / T	T	T	T	T	T / T	1	T	T	T	T / T	T	T	T	T	T / T	1	1	1	T / T	12	1	.95	11.4
Perennial Forbs	T / 1	T	3				T		* T	T	T / T	T	T	T	T	T / T	T		T	1 / T	10.5	1-5/2 .75	.40	3.[illegible]
Annual Forbs	T / T	T	T	T	T	1 / 1	1	T	1	T	T / T	T	T	T	T	T / T	1	T	1	1	13	1	.70	9.1
Shrub			4			T / T		T		T					T		2	4			12	1	.50	6

[illegible] for change of CHEE3 → CHGL3

Correction factor = clip wt /est wt.

Total production in lb/ac = ~~89.2~~ 4.46 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	20.5
Annual Grasses	50.8
Perennial Forbs	14.3
Annual Forbs	40.6
Total Production	126.2

List the dominant species clipped for these growth forms:

Perennial Forbs:

Shrubs:

Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
1m	6	3
6m	5	6
11m	6	3
16m	5	6
20m	4	2
	(5.2)	(4)

Samples should be < 1/4 " diameter and < 1/8" thick

* estimated out of the Field

Rangeland Health Assessment - Canyons of the Ancients National Monument				
Functional/Structural Group Worksheet				
Observers: HASPELS STANGER	Date: 9/10/01		Polygon number: Z15	
Saltdesert Breaks - 406				
Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen	M	T	Utah Juniper	
Shrubs - sprouting	M		Rabbitbrush	
Shrubs - non-sprouting	D	M	Shadscale	ATCA, SAVE4
Shrubs - non-sprouting	M		Fourwing, Winterfat, Sage	
Shrubs - invasive		S		GUSA2
Cool Season Bunchgrasses	M-S		Salina wildrye, Ricegrass, Squirreltail, Needle&thread, Sandburg, Threeawn	
Warm Season Bunchgrasses	S		Alkali sacaton	
Warm Season Rhizomatous Grasses	D	D	Galleta	
Cool Season Rhizomatous	M		Westernwheat	
Annual Grasses		S		Cheat, Hoaded Barley
Forbs - annual		M		PLPA2 ERCI6, LAMA4, GIOP SHAN2, HEMN3
Forbs - perennial	M	M	Onion, Phlox, Primrose, Princesplume, Globemallow, Sego, Cymopteris, Larkspur	CHFE3, Orocoalya, LEKI
Forbs - Nitrogen fixing		T	Locoweed	
Noxious weeds				
Biological crusts	S	T	Cyanobacteria, Lichens, Moss	

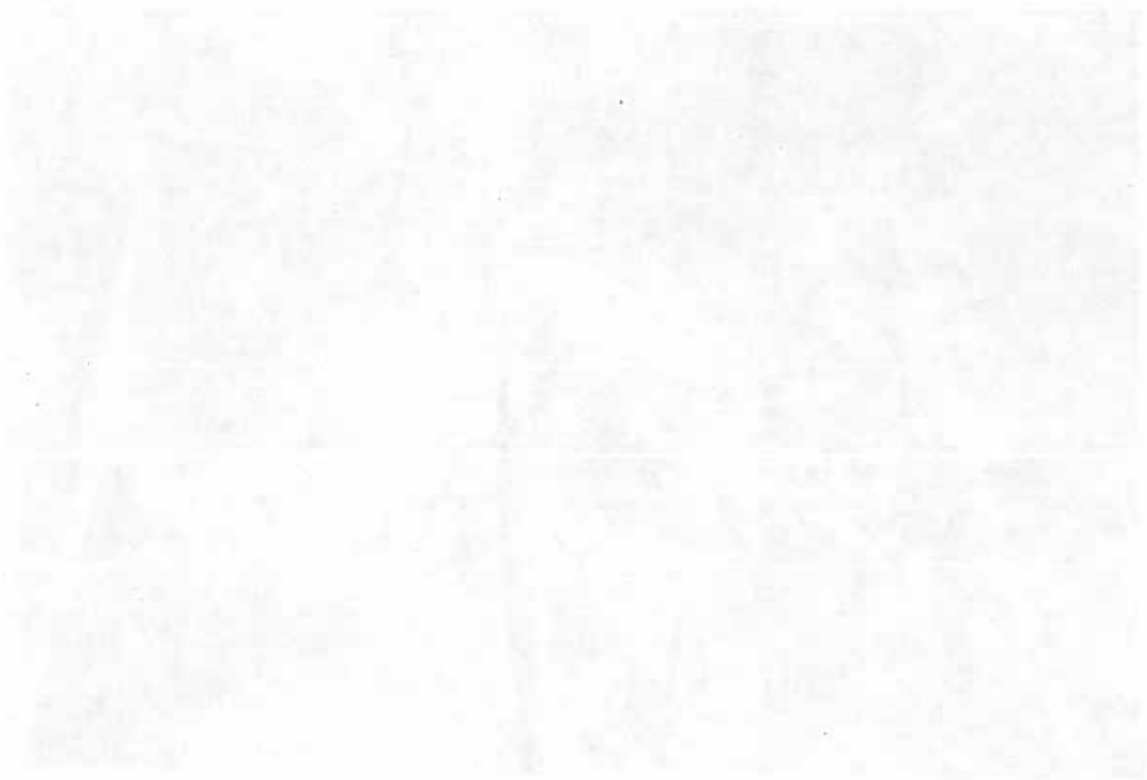
D - Dominant = 40 to 100% composition	* Potential based on ecological/range site description or ecological reference area
S - Subdominant = 10 to 40% composition	
M - Minor = 2 to 5% composition	Actual is for the area of evaluation
T - Trace = <2% composition	

Comments: Potential annual production should be 200 pounds/acre in an average year

CANM Rangeland Health Evaluation Photos

Allotment Yellow Jacket
Polygon # 215
Date 9/6/2001

Transect photo



BLM, CANM Rev.4/3/01

DONE ✓

Canyons of the Ancients National Monument
Rangeland Health Evaluation Summary Worksheet - Evaluation Area ____

Part 1. Area of Interest Documentation:

Observer(s): HASPELS STONER

Date: 9/13/01 | Polygon # 216

Allotment: YELLOWJACKET

Pasture:

Location: GPS lat 37° 22.784' long 108°59.781 Legal SE S 13 T 36N R 20W

Aerial Photo: 1-2-10 | Site Photos - Roll: 32 | Number: 19 20

Soil Map Unit/Component Name: (4 ZACOL) ZWICKER CLAYSPRINGS | Number: 138

Range/Ecological Site Name: Clayey salt desert | Number:

Slope: 5% | Aspect: 200° | Topographic Position: Rolling Canyon Bottom | Elevation: 5110

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: CLAY LOAM | Parent material: Morrison Shale

Depth: Very shallow <10" ____ Shallow 10-20" ____ Moderate 20-40" ____ Deep >40" X

List diagnostic horizons in profile and depth:

1 strongly effervescent from start | 2 clay films 5-31" | 3 Gypsum CaCO3 31-60" | 4

Evaluation Area Determination:

Surface texture: Clay loam | Parent material: Morrison Shale

Depth: Very shallow <10" ____ Shallow 10-20" ____ Moderate 20-40" ____ Deep >40" X

List diagnostic horizons in profile and depth:

1 Some calcic 10" | 2 clay films 13-28" | 3 28" Gypsum CaCO3 28" on | 4 dug to 60"

Avg. annual PPT: Cortez 13", Hovenweep 11" | Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: light

Livestock Use: moderate

Offsite influences on area and significance e.g. roads, chainings, fire: NONE

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Int
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	2	2	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bio Inter
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	3	3	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	2	2	
Comments								
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	3	3	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	3		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	2	2	2
Comments								

Polygon # 110

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	2	2	2
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		2	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	4	4	4
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site, and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			2
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			3
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		3	3
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			2
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			1
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			2
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functionnl groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	1	1	1
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	Bi Inte
1. Extreme	1	1	2
2. Moderate to Extreme	(4)	(5)	(5)
3. Moderate	3	4	2
4. Slight to Moderate	1	1	1
5. None to Slight	1	1	-
	10	12	

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the indicator summary section

Cover Frequency Data Sheet

Observers: HASPELS STINNER | Date: 9/13/01 | Polygon #: 216

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of ____

LF	Species code	meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5	SCC	ACC	% Freq	CFI
G	HIJA		T	3	2		0	T	2	0	1	1	0	1	0	2	1	2	0	1	2	4	236	11.8	.95	11.2
G	ANTE6		4	2	4	4	1	2	2	4	2	5	1	5	1	2	1	6	1	4	4	7	620	31	1	31
	MOSQ			T	T	0			1	1	T								T	T			16	.8	.4	.3
	VUOC				1	0	0	T	0	0	T	T		T			T	0	T	0	0	0	37	1.8	.75	1.4
A	~~THFE3~~ CHG43		1	0	1	2	0	0	T	T	0	0	0		0	0	0	T	0	1		0	84.5	4.2	.9	3.8
FP	1.6														0	T			0		0		9.5	.5	.2	.1
	PLPA2		T	T	T		T			T	T	0	T	T	0	—	T		T		T	T	12.5	.6	.75	.4
	FRC16		1	1	0		0	0	1	0	0	T	0	—	T		T	0		2	2	1	10.3	5.2	.85	4.4
	CEOR2																T					0	3.5	.2	.1	—
	DEPI																	T				T	1	—	.1	—
	DRC4																		T				.5	—	.05	—
	ASI 4		T		T	T	T	T	T	T	T	T		0		T	T	T	T	T	T	T	11	.6	.85	.5
Bare soil without canopy			6	4	3	5	8	6	5	5	7	5	8	6	8	6	6	3	8	4	4	2	1090	54.5	1	54.5
Groundcover: (total groundcover should equal 100%)																										
Cyanbac. crust			0	T			T	T	0			T	0				T	0	0	T	1	1	38	1.9	.65	1.2
Moss																				T	T		1	—	.15	—
Lichen																		T		T		T	1.5	.1	.15	—
Litter			3	4	6	4	2	3	4	4	2	5	1	4	2	3	3	5	2	5	5	6	730	36.5	1	36.5
Wood																	/									
Basal Veg			T	0	T	T	T	T	0	T	0	T	T	T	T	T	T	0	T	T	0	0	25	1.2	1	1.2
Bare Soil			6	5	4	6	8	7	6	6	8	5	8	6	8	6	7	5	8	5	4	3	1210	60.5	1	60.5
Gravel <3 in.			1	0	T	T		T	0	0	0	0	0	0	T	1	T	0		T	1	T	48	2.4	.9	2.2
Cobble 3-10 in																										
Stone 10-24 in.																										
Boulder >24 in.																										
Bedrock																										

Code	Range	Mid-point	Code	Range	Mid-point
T	0 - 1.0% cover	0.5%	K	55.1 - 65% cover	60.0%
1	1.1 - 5.0% cover	3.0%	L	65.1 - 75% cover	70.0%
2	5.1 - 15% cover	10.0%	M	75.1 - 85% cover	80.0%
3	15.1 - 25% cover	20.0%	N	85.1 - 95% cover	90.0%
4	25.1 - 35% cover	30.0%	O	95.1 - 99% cover	97.0%
5	35.1 - 45% cover	40.0%	P	99.1 - 100% cover	99.5%
6	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

ommon in the evaluation area that were not measured on the transect:

Line Intercept

Observers: HASPELS STONER **Date:** 7/13/01 **Polygon #:** 216

Line Length: 30 m **Transect** 1 **of** ____

Species Codes:

	ATCO			SAVE4																	
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	760	828	68	2735	2782	47															
Total Intercept			68			47															
% Cover			2 %			2 %															

Circle intercept values that are standing dead material

SAUT3 0%

Production Data Sheet

Observers: Stoner, Haspels | Date: 9-13-01 | Polygon #: 216

Transect length: 30 meters | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

Growth form	0 1*	15 2	3 3	45 4	6 5	75 6*	7 7	105 8	12 9	135 10	15 11*	65 12	18 13	195 14	21 15	225 16*	24 17	255 18	27 19	285 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses	T	2	1		T	T	3	1	2	1	1	1	1	1	1	1	T	T	1	3 2	20.5	0.5/0.5 1.22	.55	13.8
Annual Grasses	3 2	1	2	3	1	1	1	2	2	2	1	2	1	1	1	3	1	2	2	4 3	34	12/10 1.2	.95	38.8
Perennial Forbs			-			-							T	T			T		* T		2	—	.9	1.8
Annual Forbs	1 T	T	T	2	1	T	T	T	1	T	T	T	T	1	T	T	T	1	T	2	15	1.5/1 1.5	.85	19.1
Shrub						5 4															4	1.25	.50	2.5

Correction factor = clip wt /est wt.

Total production in lb/ac = ~~8P.2~~ x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	61.5
Annual Grasses	173.0
Perennial Forbs	8.0
Annual Forbs	85.2
Shrubs	11.1
Total Production	338.8

List the dominant species clipped for these growth forms:

Perennial Forbs: ~~CHFE3~~

Shrubs: ATCO

Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of submersion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
1m	6	2
6m	6	2
11m	6	2
16m	6	3
20m	6	1

Samples should be < 1/4 " diameter and < 1/8" thick

5/1

6 (28)

Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: HARRIS STARR Date: 9/13/21 Polygon number: 216

Clayey Saltdesert - 403

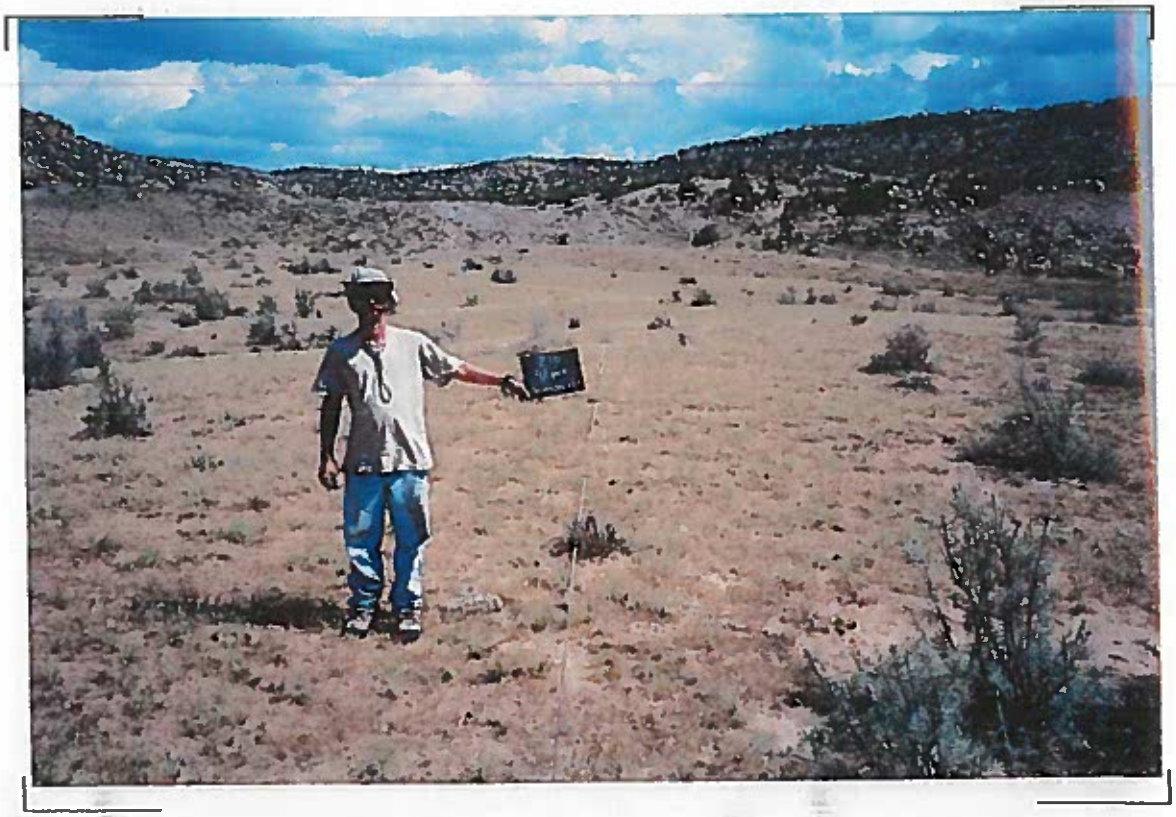
Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen	M		Utah Juniper	
Shrubs - sprouting	M	T	Rabbitbrush	
Shrubs - non-sprouting	D	T	~~Nuttall saltbush~~, Mat saltbush	
Shrubs - non-sprouting	S	M	~~Shadscale~~, Fourwing, winterfat, budsage,	SAVE4
Shrubs - invasive	M	T	Snakeweed	
Cool Season Bunchgrasses	S		Salina wildrye, squirreltail	
Cool Season Bunchgrasses	M	T	Ricegrass, needle&thread, Sandburg, Threeawn	
Warm Season Bunchgrasses	M	M	Alkali sacaton	
Warm Season Rhizomatous Grasses	S	S	Galleta	
Cool Season Rhizomatous	S		Westernwheat	
Annual Grasses		D		cheat MOSQ VUOC
Forbs - annual		M		PLPA2 ERCI6 DRCU DEPI CHAL7, PROL
Forbs - perennial	M	T	Onion, Phlox, Primrose, Princesplume, Globemallow, Sego, Cymopteris	CHFE3
Forbs - Nitrogen fixing		T	Wooly locoweed	
Noxious weeds				
Biological crusts	S	T	Cyanobacteria, Lichens, Moss	

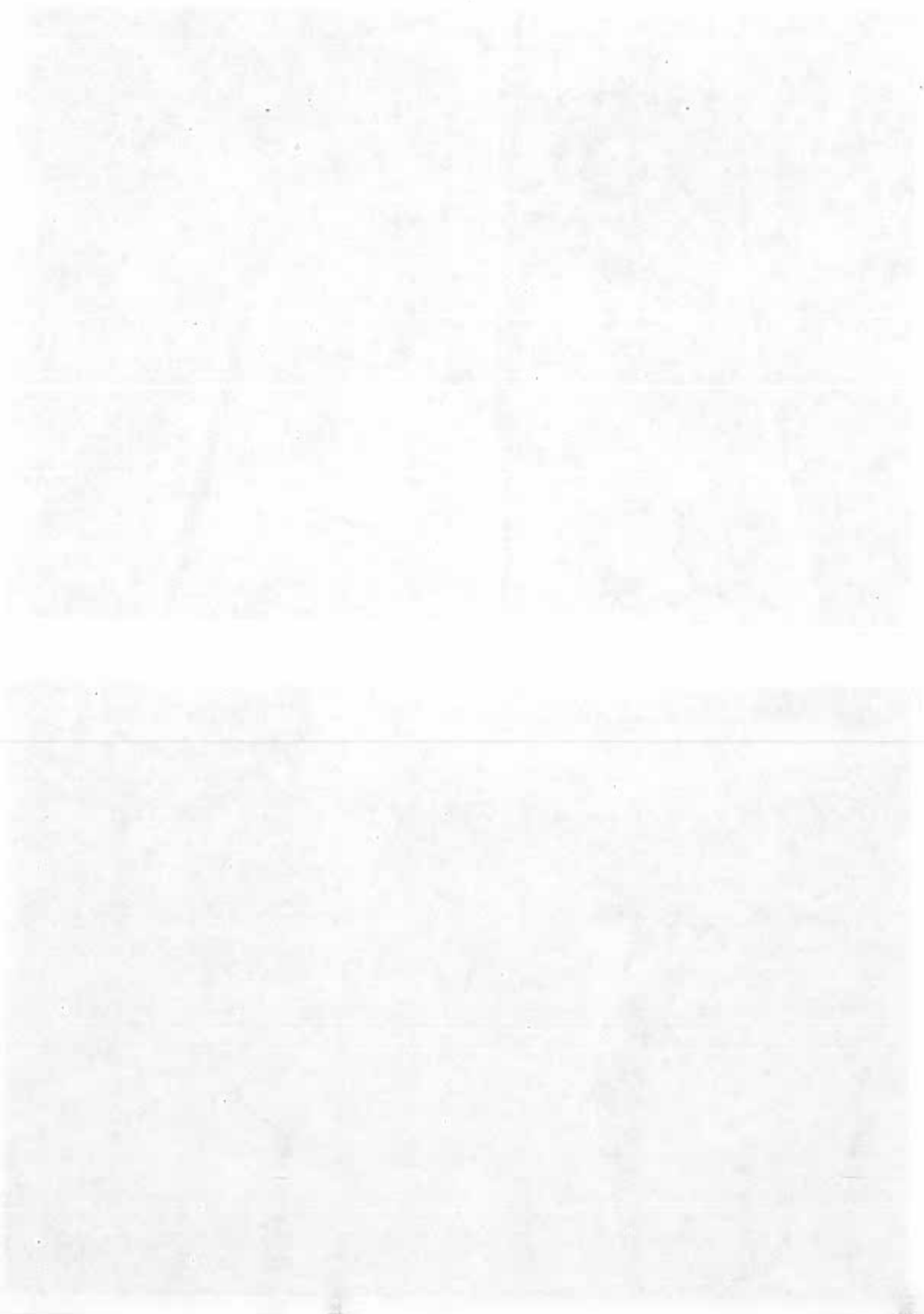
D - Dominant = 40 to 100% composition	* Potential based on ecological/range site description or ecological reference area
S - Subdominant = 10 to 40% composition	
M - Minor = 2 to 5% composition	Actual is for the area of evaluation
T - Trace = <2% composition	

Comments: Potential annual production should be 350 pounds/acre in an average year

CANM Rangeland Health Evaluation Photos

Allotment Yellow Jacket
Polygon # 216
Date 9/13/2001





BLM, CANM Rev.4/3/01

DONE ✓

Canyons of the Ancients National Monument

Rangeland Health Evaluation Summary Worksheet - Evaluation Area

Part 1. Area of Interest Documentation:

Observer(s): Stoner, Haspels | Date: 9-13-01 | Polygon # 27

Allotment: Yellow Jacket | Pasture:

Location: GPS lat(No satellites)long | Legal SES 13 T36N R 20W

Aerial Photo: 1-2-10 | Site Photos - Roll: 32 | Number: 17, 18

Soil Map Unit/Component Name: TXPIC Torriorthents | Number: 133

Range/Ecological Site Name: Saltdesert Breaks | Number: 406

Slope: 2% | Aspect: 294° | Topographic Position: Mesa Slope | Elevation: 5200

Range/Ecological site description, soil survey, and/or ecological reference area:

Surface texture: stony sandy loam | Parent material: colluvium, alluvium & residuum from mixed sources

Depth: Very shallow <10" X Shallow 10-20" X Moderate 20-40" X Deep >40" X

List diagnostic horizons in profile and depth:

1 65% stones 0-3" | 2 3-7" stony clay loam, 45% stone | 3 7-16" 0-60% gravel | 4

Evaluation Area Determination:

Surface texture: stony-sandy loam | Parent material: colluvium; Alluvium residuum from mixed sources

Depth: Very shallow <10" ___ Shallow 10-20" ___ Moderate 20-40" X Deep >40" ___

List diagnostic horizons in profile and depth:

1 15% gravel throuout | 2 Bedrock 23" | 3 >16" | 4

Avg. annual PPT: Cortez 13", Hovenweep 11" | Recent Weather (last 2 years): Drought 2000 Normal 2001 Wet

Wildlife Use: Light

Livestock Use: Light

Offsite influences on area and significance e.g. roads, chainings, fire: none

Benchmark used for comparison: Ecological Reference Area ____ (ERA number ____) or Site/Soil Description and/or experience X

Part 2. Indicator Rating:

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	BI Int
1. Rills	Rill formation is severe and well defined throughout most of the area	Rill formation is moderately active and well defined throughout most of the area	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site	5	5	
Comments								
2. Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.	3	3	
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bio Inter
3. Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled: exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation especially in water flow patterns and/or on exposed slopes.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.	4	4	
Comments								
4. Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately to much higher than expected for the site. Bare areas are large and occasionally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	4	4	
Comments								
5. Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	Drainages are represented as natural stable channels; no signs of erosion with vegetation common.	3	3	
Comments								
6. Wind-Scoured Blowouts, and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.	4		
Comments								
7. Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	Matches that expected for the site with a fairly uniform distributing of litter.		3	
Comments								
8. Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Matches that expected for the site. Surface soil is stabilized by organic matter decomposition products and/or a biological crust.	3	3	3
Comments								

Polygon # 211

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
9. Soil Surface Loss of Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.	3	3	3
Comments								
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff.	Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution. Plant cover changes have only a minor effect on infiltration.	Infiltration and runoff are equal to that expected for the site. Plant cover (distribution and amount) adequate for site protection.		4	
Comments								
11. Compaction Layer (below soil surface).	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None to minimal; not restrictive to water movement and root penetration	4	4	4
Comments								
12. Functional/ Structural Groups	Number of F/S groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.			4
Comments								
13. Plant mortality/ Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/or decadent plants are present.	Slight plant mortality and/or decadence.	Plant mortality and decadence matches that expected for the site.			4
Comments								
14. Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather	Slightly more or less relative to site potential and weather.	Amount is what is expected for the site potential and weather.		4	4
Comments								
15. Annual Production	Less than 20% of potential production	20 to 40% of potential production	40 to 60% of potential production	60 to 80% of potential production	Exceeds 80% of potential production			4
Comments								
16. Invasive Plants	Dominate the site	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on the site.			2
Comments								

Indicator:	1. Extreme	2. Moderate to Extreme	3. Moderate	4. Slight to Moderate	5. None to Slight	Soil/Site Stability	Hydrologic Function	Bi Inte
17. Reproductive Capability of Perennial Plants (native or seeded)	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is not limited relative to recent climatic conditions.			3
Comments								
18. Biological Crusts	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces	Evident throughout the site but continuity is broken	Largely intact and nearly matches site capability	3	3	3
Comments								

Indicator Summary:	Soil/Site Stability	Hydrologic Function	Bi Inte
1. Extreme			
2. Moderate to Extreme			1
3. Moderate	(5)	(6)	(4)
4. Slight to Moderate	4	5	5
5. None to Slight	1	1	
	10	12	1

Attribute Summary: Circle the umber that best fits the "preponderance of evidence" for each of the three attributes relative to the distribution of indicator ratings in the Indicator summary section

Cover Frequency Data Sheet

Observers: Stoner Haspels | Date: 9-13-01 | Polygon #: 217

Transect length: 30 m | Frames per transect: 20 @ 20x50 cm | Transect 1 of 1

meter for frame location	0.0	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5				
LF Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI
G SPAI			0									3		1	0	0				0	52	2.6	.3	.8
HISA				T		0										1		3	2		63.5	3.2	.25	.8
Sa ANTE6	0	T	0	0	0	3	4	4	0		0	4		2	1	1	2	1	T		239	12.0	.85	10.2
DUOC						0						0			T			1	T	T	17.5	.9	.3	.3
FA CHFE3 CHG43	T	0		T	0		1		T								T				18	.9	.35	.3
SIAN2																		T			.5	—	.05	—
GIOP														0	T		0	T			7	.4	.2	.1
Fa PLPA2	0	0		0	0	0						1			0		T	0	T	T	32.5	1.6	.55	.9
DEPI			T														0				3.5	.2	.1	—
LASQ				T													T				1	—	.1	—
ERCI6					0							2				1	0				36	1.8	.2	.4
CEOR2						0															3	.2	.05	—
ORCO												0						T			3.5	.2	.1	—
ASNU4							T														.5	—	.05	—
Bare soil without canopy	3	2	—	7	4	3	0	9	1	—	—	2	—	—	5	2	1	1	3	2	453	22.6	.75	17.0
Groundcover: (total groundcover should equal 100%)																								
Cyanbac. crust	3	2		1	0	1						0			0	1	2	2		2	149	7.4	.55	4.1
Moss						1			1			0									23	1.2	.15	.2
Lichen	1	1		0		1									0	1	1	1	1	1	86	4.3	.5	2.2
Litter	1	2	0	1	0	5	5		2		T	7		8	3	5	4	2	3	1	996.5	24.8	.85	21.1
Wood								1						1		1	1			1	50	2.5	.25	.62
Basal Veg	T	T	T	T	T	0	0	0			T	0		1	0	0	1	1	0	T	54.5	2.7	.85	2.3
Bare Soil	3	2	—	7	4	3	0	9	1	—	—	2	—	—	5	2	1	1	3	2	453	22.6	.75	17.0
Gravel <3 in.	2	2		1	2	T	1				1	T			1	T		2	2	2	161.5	8.1	.65	6.3
Cobble 3-10 in		1																1	1		30	1.5	.15	.2
Stone 10-24 in.					4															1	50	2.5	.1	.25
Boulder >24 in.			A				4		6	X	9		X								486	24.3	.3	7.3
Bedrock																								

Code	Range	Mid-point	Code	Range	Mid-point
0	0 - 1.0% cover	0.5%	6	55.1 - 65% cover	60.0%
0	1.1 - 5.0% cover	3.0%	7	65.1 - 75% cover	70.0%
1	5.1 - 15% cover	10.0%	8	75.1 - 85% cover	80.0%
2	15.1 - 25% cover	20.0%	9	85.1 - 95% cover	90.0%
3	25.1 - 35% cover	30.0%	A	95.1 - 99% cover	97.0%
4	35.1 - 45% cover	40.0%	X	99.1 - 100% cover	99.5%
5	45.1 - 55% cover	50.0%			

Species code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SCC	ACC	% Freq	CFI

es common in the evaluation area that were not measured on the transect:

Production Data Sheet

Observers: HASPELS, SIONER | Date: 9/13/01 | Polygon #: 217

Transect length: 30 meters | Frames per transect: 20 @ 20x50 cm | Transect _____ of _____

Growth form	0.0 W 1*	1.5 2	3.0 3	4.5 4	6.0 5	7.5 W 6*	9.0 7	10.5 8	12.0 9	13.5 10	15.0 11*	16.5 12	18.0 13	19.5 14	21.0 15	22.5 W 16*	24.0 17	25.5 18	27.0 W 19	28.5 20*	Total	Correction factor	Dry weight factor	Total dry weight
Perennial Grasses			T	T		T						5		T	T	2 3		4	2 2	T	17	4.5/5.5 ~~.8~~ .82	.55	75.7
Annual Grasses	T	T	T	T	T	1 1	2	2	T		T	3		1	T	T	1	T	T	T	16	1	.95	15.2
Perennial Forbs																								
Annual Forbs	T	T	1	T	1	T T	2	T			T			T	1	T	T	T	T	T	11	1	.85	9.4
Shrub			3			1 2	5	5						7			7		4 4		28	5/6 -8	.65	14.6

Correction factor = clip wt /est wt.

Total production in lb/ac = 4.46 x total dry wt.

* Location for soil stability test

Growth form	Pounds per acre dry weight
Perennial Grasses	34
Annual Grasses	6.0
Perennial Forbs	—
Annual Forbs	42
Shrub	65
Total Production	

List the dominant species clipped for these growth forms:

Perennial Forbs: ~~CHES~~

Shrubs: SETR4, ATCO

Soil Stability Rating Form

Rating	Criteria for assignment to stability class
0	Soil is too unstable to sample (falls through sieve)
1	50% of structural integrity lost within 5 seconds of insertion in water
2	50% of structural integrity lost 5-30 seconds after insertion
3	<10% of soil remains on sieve after 5 dipping cycles
4	10-25% of soil remains on sieve after 5 dipping cycles
5	25-75% of soil remains on sieve after 5 dipping cycles
6	75-100% of soil remains on sieve after 5 dipping cycles

Location	Under canopy	Inter-space
0 meter	6	6
7.5 meter	5	6
15 meter	6	3
22.5 meter	5	2
28.5 meter	~~6~~	3
	A 5.6	4

Samples should be < 1/4 " diameter and < 1/8" thick

Line Intercept

Observers: Stoner, Haspels | Date: 9-13-01 | Polygon #: 217

Line Length: 30 m | Transect 1 of 1

Species Codes:

	ATCO			PIDE4			SETR4			GUSA2										
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter
	210	235	25	279	298	19	740	815	75	1706	1740	(34)								
	330	350	20				910	1040	130											
	1930	2020	90				1070	1175	105											
	2290	2310	20				2648	2714	66											
	2415	2435	20																	
Total Intercept			175			19			376			(34)								
% Cover			5.8%			1%			12.5%			1%								

Circle intercept values that are standing dead material

Estimated total cover for PJ type:

SAUT3	10 %
PIED	%

	Species Codes:																				
	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter	From	To	inter

Rangeland Health Assessment - Canyons of the Ancients National Monument

Functional/Structural Group Worksheet

Observers: HA, PEIS, STINER | Date: 9/13/01 | Polygon number: 217

Saltdesert Breaks - 406

Functional/Structural Groups			Species List for Functional/Structural Group	Species List for Functional/Structural Group
Name	Potential*	Actual	Plant names - Potential	Plant names - Actual
Trees - deciduous				
Trees - evergreen	M	M	Utah Juniper	
Shrubs - sprouting	M		Rabbitbrush	
Shrubs - non-sprouting	D	T	Shadscale	
Shrubs - non-sprouting	M	M	Fourwing, Winterfat, Sage	Ephedra, Prickly Pear, ATGA, PIDE4
Shrubs - invasive				snakeweed
Cool Season Bunchgrasses	M-S	T	Salina wildrye, Ricegrass, Squirreltail, Needle&thread, Sandburg, Threeawn	HENE5
Warm Season Bunchgrasses	S	S	Alkali sacaton	
Warm Season Rhizomatous Grasses	D	S	Galleta	
Cool Season Rhizomatous	M	T	Westernwheat	
Annual Grasses		S		Cheat, VUOC
Forbs - annual				DEPI, LASO, CRISP, DRCU
Forbs - perennial	M	T	Onion, Phlox, Primrose, Princesplume, Globemallow, Sego, Cymopteris, Larkspur	CHFE3
Forbs - Nitrogen fixing		1	Locoweed	
Noxious weeds				
Biological crusts	S	M	Cyanobacteria, Lichens, Moss	

D - Dominant = 40 to 100% composition	* Potential based on ecological/range site description or ecological reference area
S - Subdominant = 10 to 40% composition	
M - Minor = 2 to 5% composition	Actual is for the area of evaluation
T - Trace = <2% composition	

Comments: Potential annual production should be 200 pounds/acre in an average year

CANM Rangeland Health Evaluation Photos

Allotment Yellow Jacket
Polygon # 217
Date 9/13/2001